ARIZONA SKILL STANDARDS ASSESSMENT SYSTEM

2011 Annual Report

presented to

Arizona Skill Standards Commission

and

Arizona Stakeholders Committee

July 17, 2011

Arizona Department of Education
John Huppenthal, Superintendent of Public Instruction

ASU UNIVERSITY COLLEGE
ARIZONA STATE UNIVERSITY

ARIZONA SKILL STANDARDS ASSESSMENT SYSTEM

LETTER OF TRANSMITTAL

The Arizona Career and Technical Education System was conceived in 2006 in response to both state and federal legislation requiring students to pass end-of-program assessments leading to industry certification. The Arizona Department of Education/Career and Technical Education (CTE) Section took the lead in forging a partnership with Arizona State University/Workforce Education and Development Office to design and implement key system components to not only meet legislative requirements but to provide "added value" to all users of the system: business and industry, districts, schools, postsecondary institutions, and most especially to students and adults seeking entry into the workforce.

The 2011 Annual Report contains background material dating to the inception of the Arizona Skill Standards Assessment System; accomplishments, results, and ongoing processes of a continuous improvement work cycle; and projections for next year and beyond. Additional documents that provide further elaboration on various items have been added as appendices.
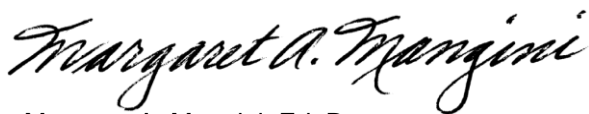
Just this year, over 600 business and industry representatives, teachers, and administrators have been directly involved in various facets of assessment development – from leadership roles through standards validation and item development. Almost 16,000 CTE students participated in the spring 2011 online, end-of-program assessments offered in 51 program areas. Over 12,000 CTE students were awarded certificates and transcripts documenting their skill attainment, readying them for their next steps on their career journeys. Over 400 business and industry representatives participated in the Workplace Employability Skills Project.

The establishment of the Arizona Skill Standards Assessment System is having salient effects on all those involved. For students, the immediate delivery of assessment results and the Commission's awarding of certificates and transcripts are fostering a culture of more engaged and responsible learners. For teachers and administrators, the analyses of assessment results and the active involvement in assessment development are contributing to overall improvement of classroom instruction in all parts of the state. Increasingly, Arizona business and industry leaders are witnessing the value of documented skill attainment.

The Arizona Skill Standards Assessment System achieved a new plateau with all of this year's accomplishments. We wish to thank the Commission, the Stakeholders Committee, teachers, administrators, and business/industry representatives who have generously given time and expertise to make this an extraordinary year.

Barbara Border
Deputy Associate Superintendent and
State Director of Career and Technical Education
Arizona Department of Education

Margaret A. Mangini, Ed. D.
Executive Director
Arizona State University, University College
Workforce Education and Development Office

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2010 Annual Report

Arizona Skill Standards Assessment System

I. BACKGROUND

The brief history of the Arizona Skill Standards Assessment System is best understood through the following: legislation as a call to action; characteristics of the vision; system overview and decision-making entities.

LEGISLATION

The Arizona Skill Standards Assessment System was established in response to both federal and state legislation.

The system is being developed to assist local districts in meeting the requirements of the Federal Carl D. Perkins Act of 2006, which requires that secondary and postsecondary CTE programs lead to industry certifications. The US Department of Education has identified valid assessments as industry, third-party assessments or state assessments that meet the requirements of this law. Each state must identify the percentage of students at secondary and postsecondary, separately, that will take these assessments each year and the percentage of each that will pass these assessments. These are part of the performance measures that the US Department of Education negotiates each year through the five year period of this Act.

The Arizona Joint Technological Education District (JTED) legislation of 2006 requires that JTED students pass end-of-program assessments leading to industry certification. The system is being developed to assist JTEDs in meeting accountability requirements of the 2006 state legislation.

VISION

From its conception, the Arizona Skill Standards Assessment System's vision was characterized as follows:

- Statewide
- Assessments based on industry-validated standards
- Valued by stakeholders – business, education, students
- Online delivery with "real time" feedback
- Comprehensive – no cost to students
- End-of-Program
- Expandable
- Credentials students

SYSTEM OVERVIEW

The Arizona Department of Education (ADE)/Career and Technical Education (CTE), in partnership with Arizona State University (ASU)/Workforce Education and Development Office (WEDO), has joined forces with others to establish a skills assessment system that meets the needs of Career and Technical Education in Arizona. The outcome ensures industry-validated standards for all CTE programs and an online skills assessment delivery system that serves secondary, comprehensive Career and Technical Education, Joint Technological Education Districts, Community Colleges, and the Arizona Department of Economic Security One-Stop Centers (APPENDIX A).

DECISION-MAKING ENTITIES

The Arizona Skill Standards Assessment System was structured with the following decision-making entities:

- The Arizona Skill Standards Assessment Commission
  Arizona business and industry leaders who hire a skilled technical workforce
- Stakeholders Committee
  Local education administrators and instructional staff from secondary and postsecondary education and Workforce Investment Act (WIA) representatives
- Industry Associations
  Representatives of trade groups, professional associations, unions, and state certifying agencies
- Validation Committees
  Incumbent workers from Arizona businesses and industries representing occupations from regions across the state
- Item Development Committees
  Secondary and postsecondary program instructors

The functions of each of the system's decision-making entities and the Facilitation Team for the Commission and Stakeholders are described in APPENDIX B.

II. ASSESSMENT LEADERSHIP GROUPS

A structure of leadership was developed to bring representation of all groups who have interest in advancing a more knowledgeable and skilled workforce for Arizona's economic future. Major leadership functions for the Arizona Skill Standards Assessment System reside in two groups.

THE ARIZONA SKILL STANDARDS COMMISSION

Co-chaired by Tom Horne, Arizona Superintendent of Public Instruction, and Carolyn Warner, President of Corporate Education Consulting and former Arizona Superintendent of Public Instruction for the first half of the year and then by the new Superintendent of Public Instruction, John Huppenthal, the Commission is composed of over 40 Arizona business and industry leaders (APPENDIX C). The Commission presides over the Arizona Skill Standards Assessment System and performs the following functions:

- Approve industry-validated standards that have been established.
  The Commission accepted the state CTE standards for Workplace Employability Skills presented in a report to the Commission (May 24, 2011).

- Provide certificates to students who pass the assessments
  The Commission awarded 12,795 CTE students certificates and transcripts documenting skill attainment along with a congratulatory letter signed by the Commission Co-chairs (APPENDIX H) to those who successfully passed assessments.

- Serve as a conduit to business and industry
  Members of the Commission participated in committee meetings, focus groups, and/or provided contacts for others to serve as needed.

The Commission met on the following dates:

July 18, 2010	Tucson, Westin La Paloma
October 20, 2010	ASU Downtown Phoenix Campus, Cronkite School
January 27, 2011	ASU Downtown Phoenix Campus, Mercado
May 24, 2011	Arizona State Chamber of Commerce and Industry, Phoenix

Minutes of Commission meetings are archived.

STAKEHOLDERS COMMITTEE

Co-chaired by Barbara Border, ADE/CTE, and Maggie Mangini, ASU/WEDO, the Stakeholders Committee is composed of over 40 CTE administrators and instructional leaders from secondary and postsecondary education, along with Workforce Investment Act (WIA) representatives (APPENDIX D). The functions of the Stakeholders are as follows:

- Develop administrative processes
    With thoughtful analysis and consideration, this year the Stakeholders made assessment pass score recommendations and continued work on all matters pertaining to CTE assessments through both standing and ad hoc committees.

- Ensure the usability of the assessment system
    The Stakeholders provided leadership and support for all phases of the ongoing development of the online delivery system; Stakeholders made recommendations for additional system reporting features useful to teachers and administrators.

- Assist with the delivery of assessments
    The Stakeholders reviewed and approved calendars for assessment delivery which included meetings for item analyses and development; in addition, Stakeholders provided leadership for others to be involved in the assessment process.

The Stakeholders met on the following dates:

July 18, 2010	Tucson, Westin La Paloma
October 22, 2010	ASU Downtown Phoenix Campus, Mercado
January 21, 2011	ASU Downtown Phoenix Campus, Mercado
March 4, 2011	West-MEC, Glendale
May 17, 2011	ASU Downtown Phoenix Campus, Post Office
June 23, 2011	Flinn Foundation, Phoenix

Minutes are archived for each of the meetings.

III. ADE/CTE ASSESSMENT DELIVERY SYSTEM

This year marked the second year of the state's own ADE/CTE online assessment delivery system.

ONLINE DELIVERY SYSTEM PROJECT

During the school year 2009-2010, the Arizona Department of Education (ADE) Career and Technical Education (CTE) Section in partnership with the Arizona State University Workforce Education and Development Office launched the Arizona CTE Assessment System on the Arizona Department of Education server. Arizona CTE assessments were previously administered by a private vendor. The Arizona CTE Assessment System continues to be owned by the State of Arizona. The test application and data are housed at the Arizona Department of Education. During the 2010-11 school year, many improvements were made to the system.

The CTE Assessment System is a secure application that follows state-established security principles and requirements. All assessment data reside on the ADE server. It is available for districts to access the system on the ADE home page. Districts access this link to register students for assessments, conduct assessments, and access summary reports, 24/7 during designated assessment windows. After assessments are completed, the assessment system also is used to generate individual student transcripts and certificates.

The CTE Assessment System is written to ADE IT specifications and takes advantage of the MS.NET framework. The technical specifications are commonly available at each of the school districts with only a very few districts having reported any technical difficulties which were resolved. It is maintained and supported by the Arizona Department of Education Information Technology Project Manager, Bob Lee.

The ongoing year's development and successful implementation of the state-owned online delivery system continues to be the major hallmark of the Arizona Skill Standards Assessment System. The members of the Project Team engaged in intense collaboration throughout a year of deadlines as evidenced in APPENDIX E.

END-OF-PROGRAM ASSESSMENTS

This year, 51 end-of-program assessments were delivered via the ADE/CTE Assessment Delivery System. What started with 13 end-of-program assessments in the spring of 2008 has now been increased almost fourfold within three years (APPENDIX F). The process steps ensure continuous development and improvement of assessments with plans for continued online delivery of 51 end-of-program assessments in fall 2011.

The CTE assessments are designed for CTE students who are in their final Carnegie Unit of the state-identified sequence of courses for a specific CTE program. Some Arizona students complete more than one CTE program and, therefore, take two assessments.

USER TRAINING AND REGISTRATION

Numerous training webinars were provided to districts in preparation for Fall 2010 assessments. A CTE Assessment Administration Guide was created to provide additional detail and remains available online as a resource for districts. A new feature was added to the Spring 2011 assessment window: a "voice over," step-by-step training presentation available 24/7 on the ADE website negating the need for scheduled webinars.

As district administrators prepared to register their students, the first step was to set up permission levels for various testing administrators including CTE teachers. The system supports an easy upload for student registration as well as re-registration. Easy edit features make the system user-friendly for district staff. This year, more users became familiar with the system and its features.

ASSESSMENTS AND RESULTS

During school year 2010-2011, there were two multi-week windows (November 1 – December 3, 2010 and March 28 – May 5, 2011) for districts to conduct assessments in 51of the CTE program areas. Most students (90%) took Practice Assessments in the fall. Upon completion of their Practice Assessments, the students received a printed copy of their success on each of the standards and measurement criteria to use as a study guide prior to taking their Final Assessment at the end of the school year. Their teachers automatically received an email message with the same information to provide direction for the students to prepare for their spring Final Assessments.

Beginning on March 28, 2011, Final Assessments were available for students in the 51 CTE program areas. Over 15,000 CTE students who had completed the CTE program sequence participated in Spring 2011 Final Assessments. Over 12,000 students passed their assessments. The results of the Final Assessments are presented in APPENDIX G.

Students tested in 47 of the 51 available program assessments. Two programs each exceeded 1,000 students assessed. Culinary Arts – 2,972 and Early Childhood Education - 1,299, constituting just over one-fourth of all students assessed in Spring 2011.

There were seven programs that in Spring 2011 assessed between 500 – 999 students: Nursing Services (854); Professional Sales and Marketing (782); Automotive Technologies (755); Business Management and Administrative Services (723); Law, Public Safety and Security (639); and Welding Technologies (601). Together, students assessed in these program areas constituted approximately one-third of the total number assessed in Spring 2011.

The remaining 40% of students assessed participated in 37 different program assessments.

Overall, four out of five (81%) of students assessed passed final Spring 2011 assessments.

CERTIFICATES AND TRANSCRIPTS

After the close of the assessment window on May 5, 2011, files were created to generate and print certificates and transcripts for all students who passed their assessments. The ADE Print Shop printed certificates, transcripts, and congratulatory letters for 12,795 students (APPENDIX H). They were delivered to districts the following week. Many districts used the certificates and transcripts for celebratory events including graduation. A sample of comments indicates the certificates and transcripts were well received.

My students will use them in job applications.

My students have scanned their Certificates and Transcripts into their BMAS portfolios.

We distributed the certificates at our awards banquet. Students, parents and school administrators were very impressed.

Thanks for the impressive presentation!

My student presented his certificate and transcript to a perspective employer at an interview and GOT THE JOB.

Note: All of these comments were from the Zoomerang survey.

ASSESSMENT REPORTS

All assessment reports are accessible to districts at numerous levels: student level, teacher level, high school site level, district level, and JTED level. The four reports available from the CTE Assessment System are listed below:

1. Standards and Measurement Criteria Results Report shows a breakdown of measurement with a graph of percentage correct.

2. Student Status Report shows a breakdown of measurement criteria with how many answers were correct, incorrect, and skipped.

3. Score Distribution Report is a summary of assessment date regarding scores, time on assessment, and a cumulative line graph indicating percent of students at score levels.

4. Total Results Report is a download of assessment results and complete student information as CSV file (not included in Appendix I).

Reports may be accessed by program, by school, and with any or all of the special population filters included in the system. While individual student assessment results are made immediately available to the student and a designated teacher, aggregate assessment reports are useful in identifying program strengths and areas for improvement. Examples of a statewide report indicating program standards and measurement criteria and how the total students performed on the assessment are presented in APPENDIX I.

POST-ASSESSMENT SURVEY

A Zoomerang survey was conducted with Assessment Coordinators after the close of the spring assessment window. The results provided input for continuous improvement in six areas: communication, training, connectivity, conducting the assessments, accessment reports, and certificates and transcripts. The results showed improvement in five out of six areas from the previous year, particularly in the areas of training and certifice/transcripts. All technical support was provided to districts by the ADE IT and CTE staff. The results of the survey indicated a high level of satisfaction with ADE technical support (APPENDIX J).

IV. STANDARDS VALIDATION AND ASSESSMENT DEVELOPMENT

The work cycle for continuous improvement of the Arizona Skill Standards Assessment System is year-round and involves planning, communication, management, and the contributions of literally hundreds of others.

ASSESSMENT CALENDAR

The year's Assessment Calendar (APPENDIX K) indicates work that began in July 2010 and continued heavily into fall 2010. The calendar indicates not only Standards Validation and Item Development meetings, but also meetings with the Commission, Stakeholders, and Local Directors as well as webinars for training users of the online system and combined meetings of the ASU and ADE facilitation teams to plan and implement CTE Teacher Institutes in June 2011. Additionally, Focus Group meetings for the Workplace Employability Skills Project are also included. In all, the calendar encompasses some 100 formal meetings with all that entails: planning, communication, logistics, material preparation, food, parking, and follow-up.

STANDARDS VALIDATION COMMITTEES

Arizona businesses and industries contribute to the success of the Arizona Skill Standards Assessment System through their service on Standards Validation Committees. Without industry-validated standards, assessments cannot be created. This year, the standards validation work was concentrated in the area of Multimedia Technologies. APPENDIX L contains details of business and industry work in the area of Multimedia with standards development as a work in progress.

ITEM BANK DEVELOPMENT AND MANAGEMENT SYSTEM

To develop an assessment item bank in each of the program areas that contain valid and reliable items, a management system and item development tool has been developed at ASU. The Assessment Team receives assessment results from the ADE/CTE Delivery System. To develop criterion-referenced assessments that contain valid and reliable items, aggregate student performance on each item is analyzed by the Assessment Team and groups of teachers as content experts. Each assessment item is analyzed for item difficulty, item discrimination, and distractor pattern. APPENDIX M contains further information on item analysis and the contents of the Management System: catalog of assessments; sample program indicating standards, measurement criteria, items; and a sample of one assessment item.

An Assessment Management System and Assessment Item Development Tool has been in development and use over the past two years. The system is providing a repository of assessment items for each program. After each administration of assessments, the empirical data on actual performance of the item allow the Assessment Team and content experts to tag items in four categories: Active (items that have successfully met criteria for difficulty and discrimination); Edited (items that have been modified or changed); New (items that have recently been created and for which there are no performance data); or Retired (deemed unsuitable for use). The Management System is designed to trace the history of each

assessment item within the many item banks. A new feature added this year is one that allows the tagging of each item using Bloom's Taxonomy for the underlying knowledge domain and cognitive processes (APPENDIX N). This feature is useful in both item development and analysis of results as item banks are further developed to contain items measuring application of knowledge within occupational fields.

The contents of the 51 Item Banks within the Management System range in size from approximately 100 items to almost 400 items, for the total number of items approaching 10,000 items.

ITEM DEVELOPMENT COMMITTEES

Secondary and postsecondary CTE teachers serve as content experts on Item Development Committees. At the turn of the new year, four Item Development Committees assembled to engage in improvement of new assessments. APPENDIX O contains the names and schools of those participating from many parts of Arizona as well as the programs and meeting dates.

The expertise of Arizona CTE teachers is contributing to the continuing improvement of CTE Assessments. Each participant was awarded a certificate of appreciation documenting the hours each has contributed to the improvement of the Arizona Skill Standards Assessment System.

CTE TEACHER INSTITUTES

CTE Teacher Institutes were held again this year. With the combined efforts of the ASU and ADE Assessment Team, two two-day summer institutes were conducted in 38 CTE program areas. Nearly 200 teachers from all parts of Arizona assembled in June 2011 at the Wyndham Phoenix Hotel near ASU's Downtown Phoenix Campus and worked on analyzing student assessment results, modifying items for future use, and creating new items to build item banks for each program. Teachers were encouraged to "Go for the Gold" by writing items at higher levels of thinking using Bloom's Taxonomy.

An added feature of this year's institutes was the inclusion of Lead Teachers whose commitment included an extra day of training to prepare them to guide other teacher participants through the item analysis and development process. Lead Teachers also worked with participants to plan group presentations that will be delivered on July 18, 2011, as part of the ACTE$_{AZ}$ 2011 Summer Conference in Tucson.

APPENDIX P contains further information on the CTE Teacher Institutes, a practice which is intended for continuation, contingent upon budget limitations, resources of time, and need for further development.

V. WORKPLACE EMPLOYABILITY SKILLS PROJECT

A major accomplishment of the 2010-2011 year involved the Workplace Employability Skills Project (APPENDIX Q). With an initial presentation from Consultant Joyce Malyn-Smith on July 18, 2010, at the Annual Joint Meeting of the Commission and Stakeholders, the project was launched at the October 20, 2010 Commission Meeting. With the leadership and host sites from JTEDs, City of Phoenix Workforce Connection, and Arizona Western College in Yuma, eleven regional Focus Groups were scheduled beginning in January 2011 and extending into March 2011.

Business and industry leaders, workforce developers, and education leaders from throughout the state (over 400 people) participated in the project. Their "voices" provided insight into the development of Arizona's New Workplace Skills – definitions, standards, and measurement criteria. A full report was delivered to the Commission on May 24, 2011. The work continues in developing rubrics and scenarios to access these skills.

ARIZONA SKILL STANDARDS ASSESSMENT SYSTEM

VI. PROJECTION FOR 2011-2012

To continue the advancement of the Arizona Skill Standards Assessment System, an action plan for reaching the 2011-2012 goals is being implemented. In addition to a progress report on processes and systems in continuing development and implementation, the 2012 Annual Report will report on the following:

- Workplace Employability Skills
  rollout to the field concurrent with development of measurements using rubrics and scenarios; Arizona business and industry representative will be actively engaged in the development process

- International benchmarking of standards and skills
  comparative analysis of prioritized Arizona CTE program standards (Phase I includes Business Management and Administrative Services, Culinary Arts, Engineering, Precision Machining) as related to comparable international standards (e.g. European Union, United Kingdom, Germany, Australia, and others as deemed feasible); continuation of process to include other CTE programs will be based on Phase I findings and experience

- Standards review by Arizona business and industry for alignment with international standards

- Additional Professional Association endorsements of standards

- Inclusion of additional CTE program areas with assessments

- Involvement of WIA (Workforce Improvement Act) One-Stop Centers in implementing use of CTE assessments with WIA clientele

- Expanded postsecondary use and accessibility of assessment system for Arizona community colleges

- Improved validity, reliability, and interpretation of assessments with assessment items categorized using Bloom's Taxonomy

- Pilot of performance task assessment captured and transmitted via applied technology and scored by occupational experts using a rubric developed specific to the task being assessed

- Continuing system development and online delivery of CTE assessments (APPENDIX E)

2011-2012 Assessment Windows

- Fall 2011   October 31 - December 1, 2011

- Spring 2012   March 26 - May 3, 2012

May the new year be one of continuing progress for the Arizona Skill Standards Assessment System.

ARIZONA SKILL STANDARDS ASSESSMENT SYSTEM

System Overview

The Who. The Arizona State University is working in partnership with the Arizona State Department and Corporate Education Consulting, Inc. to establish a skills assessment system that meets the needs of Career and Technical Education in Arizona.

The What. The outcome ensures industry-validated standards for all career and technical education programs and an online skills assessment delivery system that serves secondary comprehensive Career and Technical Education, Joint Technical Education Districts, Community Colleges, and the Department of Economic Security One-Stop Centers.

The Why. In 2006, Congress reauthorized the Perkins legislation that requires accountability for industry-validated technical skills for all Career and Technical Education (CTE) Programs. In the same year, the State of Arizona enacted legislation for Joint Technical Education Districts (JTEDS) that requires accountability for program-specific, industry-validated skills attainment for all students.

The How. The Arizona Skill Standards Commission is composed mainly of business and industry leaders, with additional representation from government, education, labor, and other key organizations. The Commission verifies the validity of the standards, ensures consistent documentation across the state, and works with the business/industry community to provide students with certificates detailing their skill attainment. Occupational-specific committees, composed principally of incumbent workers, assemble to validate standards and measurement criteria for CTE programs. Teams composed principally of educators assemble to adapt, adopt, and develop test items related to the standards and measurement criteria for CTE programs. A Stakeholders Committee, represented by the JTEDS and CTE program instructors and administrators, provides input and support for the implementation and sustainability of the assessment system.

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Arizona Department of Education in partnership with Arizona State University

Arizona CTE Skill Standards and Assessment System

Decision-making Entities

◆ **The Arizona Skill Standards Assessment Commission**

Co-chaired by John Huppenthal, Superintendent of Public Instruction and Carolyn Warner, President, CECi

- *Arizona business and industry leaders who hire a skilled technical workforce*
  - Approve industry-validated standards that have been established
  - Provide certificates to students who pass the assessments
  - Serve as a conduit to business and industry

◆ **Stakeholders Committee**

- *Local education administrators and instructional staff from secondary and postsecondary education and WIA representatives*
  - Develop administrative processes
  - Ensure the usability of the assessment system
  - Assist with the delivery of the assessments

◆ **Industry Associations**

- *Representatives of trade groups, professional associations, unions, and state certifying agencies*
  - Endorse program standards, measurement criteria, and assessments
  - Make recommendation to the Arizona Skill Standards Commission for the acceptance and adoption of industry-validated standards

◆ **Validation Committees**

- *Incumbent workers representing occupations from regions across the state*
  - Review, revise, and develop standards to meet business/industry needs
  - Engage in vetting standards with others in the field
  - Assist in securing endorsements from professional associations and agencies

◆ **Item Development Committees**

- *Secondary and postsecondary program instructors*
  - Develop assessment items linked to industry-validated standards and measurement criteria
  - Review psychometric analyses of item performance for further development of item banks and assessments
  - Engage in ongoing professional "communities of practice"

Since 2008, well over 1,200 business and industry representatives, teachers, and administrators have been involved in various facets of system development from leadership roles through standards validation and item development. In 2010-2011, some 250 business and industry representatives served on Standards Validation Committees; 225 teachers and leaders served on Item Development/Analysis Committees; over 400 business and industry, workforce development, and education representatives participated in the Arizona Workplace Employability Skills Project.

ADE-CTE/ASU FACILITATION TEAM
FOR COMMISSION AND STAKEHOLDERS

Judy Balogh, Program Manager**,** Workforce Education & Development Office (WEDO)**,** Arizona State University

David Bolger, Partner/COO**,** Corporate Education Consulting, Inc.

Helen Bootsma, Education Program Director**,** Career and Technical Education**,** Arizona Department of Education

Barbara Border, Deputy Associate Superintendent &**,** State Director, Career & Technical Education
Career and Technical Education, Arizona Department of Education

Kathy Bowersock, Webmaster and Database**,** Career and Technical Education**,** Arizona Department of Education

Jan Brite, Education Program Director**,** Career and Technical Education**,** Arizona Department of Education

Charles Losh, Consultant, Workforce Education & Development Office (WEDO)**,** Arizona State University

Maggie Mangini, Executive Director**,** Workforce Education & Development Office (WEDO)**,** Arizona State University

Melanie Ohm, Special Projects**,** Workforce Education & Development Office (WEDO)**,** Arizona State University

Lillie Sly, Associate Superintendent, Educational Services and Resources**,** Arizona Department of Education

Lynne Bodman Storms, Program Coordinator, Sr**,** Workforce Education & Development Office (WEDO)**,** Arizona State University

Evelyn Wiley, Program and Project Specialist**,** Career and Technical Education Division**,** Arizona Department of Education

ARIZONA SKILL STANDARDS COMMISSION

Co-Chairs: John Huppenthal, Superintendent of Public Instruction, Arizona Department of Education
        Carolyn Warner, President, Corporate//Education Consulting, Inc.

Don Adams, Director Human Resources , Bashas' Supermarkets
Adda Alexander, Registered Nurse (retired)
Brandon Ames, CEO, Able Information Technologies
Jesse Ary, Realtor, HomeSmart Inc.
Deborah Bateman, Executive VP, Specialty Banking & Marketing , National Bank of Arizona
Betsey Bayless, CEO, Maricopa Integrated Health System
Art Brooks, President and CEO, Arizona Broadcasters Association
Jim Campbell, President, Qwest Arizona
Susan Carlson, Executive Director, Arizona Business & Education Coalition
Jon Cherry, Vice President, Environmental, Legal and External Affairs, Resolution Copper
Bruce Coomer, Executive Director, Arizona Association for Economic Development
Mark Dobbins, Senior Vice President, Human Resources & General Affairs, SUMCO Phoenix
Kenny Edwards, Manager, Learning & Development, Salt River Project
Scott E. Ellison, General Manager, Southwest Operations, Turner Construction Company
Dr. Sybil Francis, Executive Director, Center for the Future of Arizona
Jeffery Freeman, Director, Business Partnerships, Honeywell
Rebekah Friend, Executive Director and Secretary Treasurer, Arizona AFL-CIO
Ernest Garfield, Interstate Bank Developers, Inc.
Rufus Glasper, Chancellor, Maricopa Community Colleges
Mary Ann Guerra, CEO, BioAccel
Glenn Hamer, President and CEO, Arizona Chamber of Commerce & Industry
William C. Harris, President and CEO, Science Foundation of Arizona
Linda Hunt, President, St. Joseph's Hospital and Medical Center
Debbie Johnson, CTA, President and CEO, Arizona Hotel & Lodging Association
Maxine M. Jones, President, AIMCO Precision Inc. and Secretary, Arizona Tooling & Machining Association
Jim Klinker, Chief Administrative Officer, Arizona Farm Bureau Federation
Paul Koehler, Director, WestEd, Policy Center
T.J. Martin, Commander, Phoenix Police Department
Bob Mayo, Managing Partner, Roy's Desert Ridge
Shirley L. Mays, Dean, Phoenix School of Law
Cathy McKee Olesen, Senior Vice President (retired), General Dynamics C4S
Karla Phillips, Education Policy Advisor, Office of the Governor
Doug Pruitt, President and CEO, Sundt Construction
Pat Quinn, President (retired), Qwest Arizona
Knox Ramsey, President, Valley Auto Dealers Association
Thomas F. Redicks, Advisory Committee Member, Pima County JTED and President, TutorLink, LLC
Pat Rourke, President and CEO, Bankers Trust Company
David Salisbury, President, Resolution Copper
Omar Sayed, CEO, Succeed Corporation
Joseph Shelley, Commander, Mesa Police Department
Donald G. Shropshire, Tucson Medical Center
Martin L. Shultz, Senior Policy Director, Brownstein Hyatt Farber Schreck, LLP
LeAnn Swanson,Vice President, Education Services, Arizona Hospital & Healthcare Association
Hon. Thomas Tyree, CTE Board Member, AZ State Board of Education and Yuma County School Superintendent
Morrison Warren, Jr., Senior Vice President, Chase Bank
Maryanne Weiss, President, Gustare Ltd.
Dr. James Zaharis, Vice President for Education, Greater Phoenix Leadership, Inc.

(Members and titles of those who served in 2010-11)

ARIZONA SKILL STANDARDS STAKEHOLDERS

Co-Chairs: Barbara Border, Deputy Associate Superintendent, Arizona Department of Education
Maggie Mangini, Executive Director, Arizona State University

Polly Abraham, Career Tech Assistant, Local Director**,** Coolidge Unified District
Patti Beltram, Director for Career Services**,** Peoria Unified School District
Ginnie Bushong Strait, Agriculture Ed Teacher Representative**,** Hamilton High School
Erin Chaboya, Marketing Education Teacher Representative**,** Cactus High School
Michelle Crary, Tempe CTE Accountability**,** Tempe Union High School District
Greg Donovan, JTED Superintendent**,** Western Maricopa Education Center
Sally Downey, JTED Superintendent**,** East Valley Institute of Technology
Kevin Elinski, Industrial Tech Education Teacher Representative**,** Wickenburg High School
Pam Ferguson, Executive Director**,** Association for Career and Technical Education of Arizona
Mike Glover, JTED Superintendent, Central Arizona Valley Institute of Technology
Becky Grieco, 2010 President**,** ACTEAZ/Health Careers Education Affiliate
Mark Hamilton, CTE Administrator**,** Gilbert Public Schools
Jac Heiss, JTED Superintendent, Coconino Association for Vocations, Industry and Technology
Lorie Honeycutt, CTE Administrator**,** Yuma Union High School District
Carol Hutchinson, Program Manager**,** Pima County Community College
Phil Howardell, President ATIEA, Paradise Valley High School
Ken Jacox, Industrial Technology Department Chair, Mesa High School
Marcus Johnson, Dean, Career and Technical Education**,** Arizona Western College
Paul Johnson, President ACTEAZ, West-MEC
Lois Lamer, Tech PrepYavapai Consortium
Marv Lamer, JTED Superintendent**,** Valley Academy for Career and Technical Education
Karen Lesher, Superintendent**,** Northeast Arizona Technological Institute of Vocational Education
Greg Madril, WIA Director for Pascua Yaqui Tribal Community
Tony Maldonado, CTE Administrator**,** Paradise Valley Unified School District
Brenda Marietti, Special Projects**,** Pima JTED
Cheryl Martinez, Assistant One Stop Coordinator**,** Phoenix Workforce Connection
Cliff Migal, Curriculum Program Specialist**,** Western Maricopa Education Center
John Morgan, Dean, Occupational Studies**,** Yavapai College, Chino Valley Campus
John Mulcahy, Director of Professional Development, Western Maricopa Education Center
Dean Petersen, Director of Student Services**,** Western Maricopa Education Center
Karen Poole, Associate Director for Workforce Development**,** Maricopa Community Colleges
Kathy Prather, CTE Administrator**,** Tucson Unified School District
Catherine Raymond, CTE Director**,** Marana Unified School District
Nancy Russell, Dean, Workforce Business Development**,** Pima Community College
Amanda C. Shively, CTE Curriculum Coordinator**,** Glendale Union High School District
Alan Storm, JTED Superintendent**,** Pima County JTED
Rhonda Sykes, President Elect, ACTEAZ/Health Careers Education Affiliate, Thunderbird High School
Troy Thygerson, Superintendent**,** Gila Institute for Technology
Joel Todd, Superintendent**,** Cochise Technology District
Carolyn Ufford, Manager, WIA, Arizona Department of Economic Security**,** Employment Administration
Mary I Vanis, Director, Center for Workplace Development, Maricopa Community Colleges
Nancy Walker, CTE Administrator, Page High School
Joanie Webb, Family and Consumer Sciences Teacher**,** Chandler High School
Matt Weber, Superintendent**,** Northern Arizona Vocational Institute of Technology
Stephen Weltsch, Director of Curriculum & Instruction**,** Western Maricopa Education Center
Albert Young, Director CTE/JTED - All Programs**,** Douglas Unified School District

(Members and titles of those who served in 2010-11)

CTE ASSESSMENT PROGRAM TEAM

HELEN BOOTSMA (CTE)

BARBARA BORDER (CTE)

JUDY BALOGH (ASU)

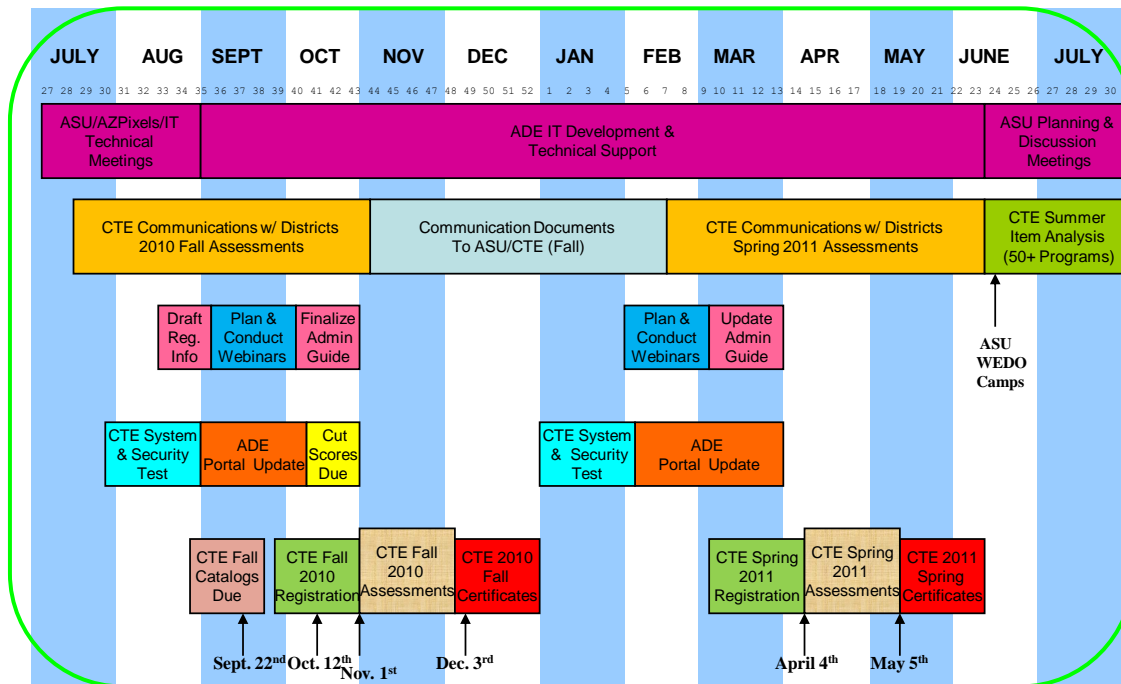**BOB KEIM (ASU)**

MAGGIE MANGINI (ASU)

KEITH ADLER (IT)

BARBARA ZALAZINSKI (CTE)

BOB LEE (IT/Project Director)
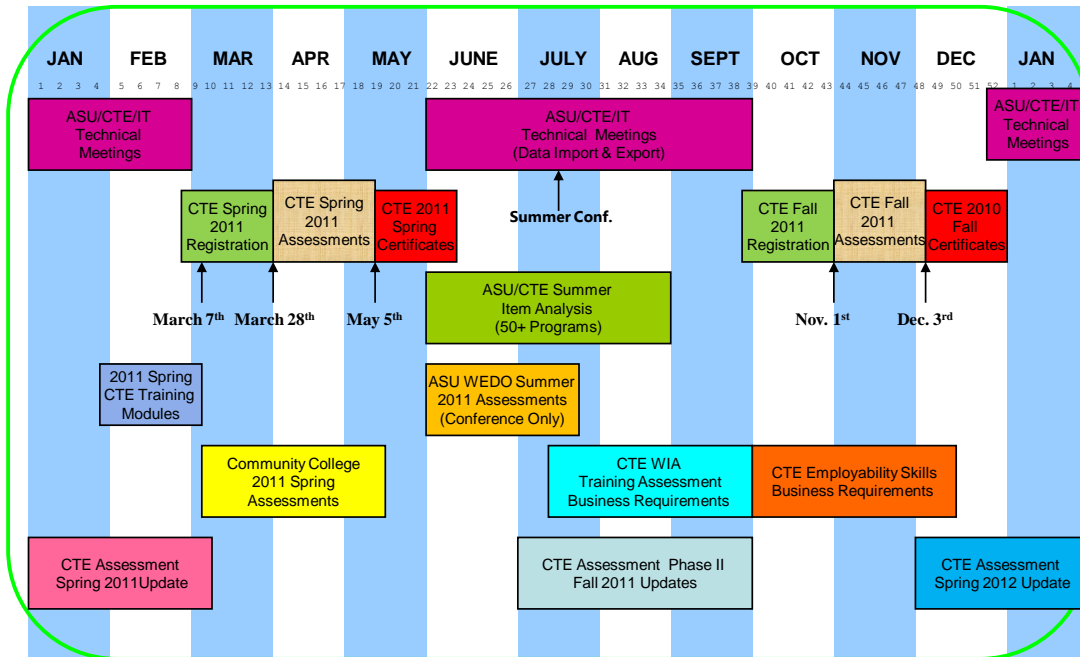
CTE ASSESSMENT PROJECT TIME LINE

Big Picture: 2010/2011
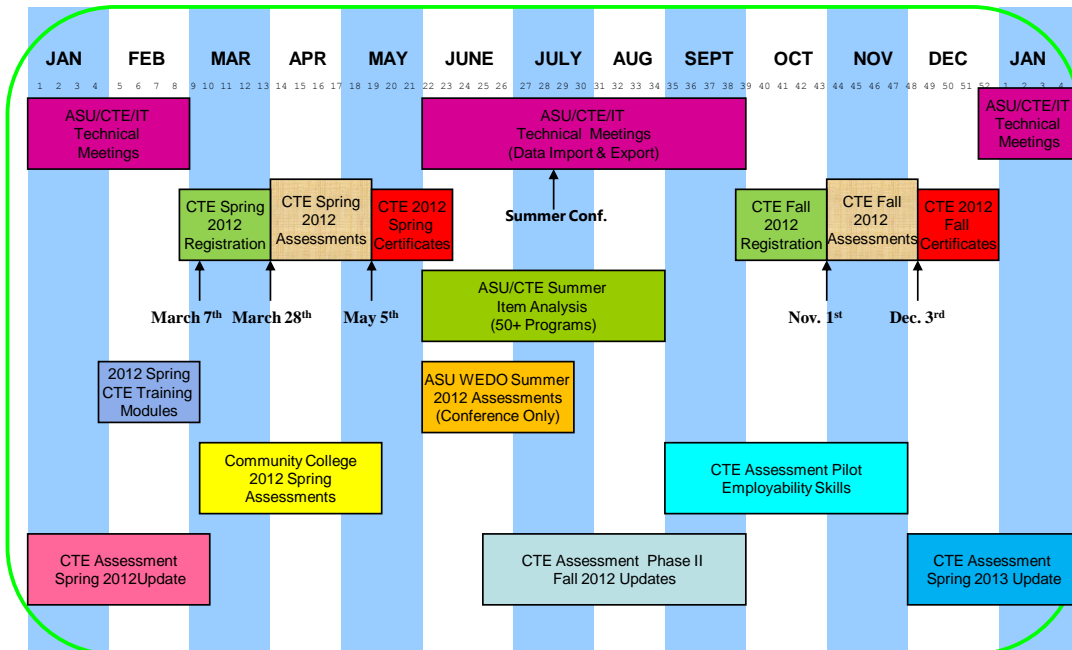
CTE ASSESSMENT PROJECT TIME LINE

Big Picture: 2011

| JAN | FEB | MAR | APR | MAY | JUNE | JULY | AUG | SEPT | OCT | NOV | DEC | JAN |

- ASU/CTE/IT Technical Meetings
- ASU/CTE/IT Technical Meetings (Data Import & Export)
- ASU/CTE/IT Technical Meetings
- CTE Spring 2011 Registration
- CTE Spring 2011 Assessments
- CTE 2011 Spring Certificates
- Summer Conf.
- CTE Fall 2011 Registration
- CTE Fall 2011 Assessments
- CTE 2010 Fall Certificates
- March 7th March 28th May 5th
- Nov. 1st Dec. 3rd
- ASU/CTE Summer Item Analysis (50+ Programs)
- 2011 Spring CTE Training Modules
- ASU WEDO Summer 2011 Assessments (Conference Only)
- Community College 2011 Spring Assessments
- CTE WIA Training Assessment Business Requirements
- CTE Employability Skills Business Requirements
- CTE Assessment Spring 2011 Update
- CTE Assessment Phase II Fall 2011 Updates
- CTE Assessment Spring 2012 Update

7/6/2011   ADE/CTE

CTE ASSESSMENT PROJECT TIME LINE

Big Picture: 2012

| JAN | FEB | MAR | APR | MAY | JUNE | JULY | AUG | SEPT | OCT | NOV | DEC | JAN |

- ASU/CTE/IT Technical Meetings
- ASU/CTE/IT Technical Meetings (Data Import & Export)
- ASU/CTE/IT Technical Meetings
- CTE Spring 2012 Registration
- CTE Spring 2012 Assessments
- CTE 2012 Spring Certificates
- Summer Conf.
- CTE Fall 2012 Registration
- CTE Fall 2012 Assessments
- CTE 2012 Fall Certificates
- March 7th March 28th May 5th
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- ASU/CTE Summer Item Analysis (50+ Programs)
- 2012 Spring CTE Training Modules
- ASU WEDO Summer 2012 Assessments (Conference Only)
- Community College 2012 Spring Assessments
- CTE Assessment Pilot Employability Skills
- CTE Assessment Spring 2012 Update
- CTE Assessment Phase II Fall 2012 Updates
- CTE Assessment Spring 2013 Update

7/6/2011   ADE/CTE

2010-2011 CTE ASSESSMENT PROJECT MILESTONES

Description	Plan	Actual
Plan CTE Assessment-Fall Dates	July 27	July 27
Start Development Assessment	Aug. 02	Aug. 02
Start Project plan 0 Fall 2010	Aug. 05	Aug. 05
Complete AZ Pixels Cross Train	Aug. 17	Aug. 17
Start Dev Design/Scope	Aug. 18	Aug. 18
IT Project Team Kickoff	Aug. 27	Aug. 27
Remove AZ Pixels Access Perm.	Aug. 31	Aug. 31
Draft Registration Info to Districts	Aug. 31	Aug. 31
Complete Dev Design/Scope	Sept. 02	Sept. 02
Begin Design/Coding	Sept. 03	Sept. 03
Plan Fall 2010 Webinars	Sept. 14	Sept. 14
Status Review w/Program Team	Sept. 14	Sept. 14
Finalize Assessment Project Plan	Sept. 14	Sept. 14
Begin ADE IT Portal	Sept. 14	Sept. 14
AZPixels Turnover0ASU WEDO	Sept. 21	Sept. 21
IT Project Team Meeting	Sept. 21	Sept. 21
Local Directors Meeting	Sept. 22	Sept. 22
CTE Assessment Fall Catalog Due	Sept. 22	Sept. 22
Complete Dev Unit Test	Sept. 24	Sept. 24
Start QA Testing-Security	Sept. 27	Sept. 27
Feedback/Approve Project Plan	Sept. 28	Sept. 28
CTE Assess In-Process Review	Sept. 28	Sept. 28
CTE Webinar run-Through	Sept. 28	Sept. 28
Complete QA Testing Security	Sept. 29	Sept. 29
CTE Assessment Webinars	Sept. 30	Sept. 30
Add CTE Hot Topics Link	Oct. 01	Sept. 30
Create Developer Test Edit	Oct. 01	Oct. 01
Complete Fall 2010 Webinars	Oct. 05	Oct. 05
Status Review w/Program Team	Oct. 05	Oct. 05
CTE Online Guide Available	Oct. 07	Oct. 12
Update CTE Assessment Manual	Oct. 08	Oct. 07
Turn On CTE Registration	Oct. 08	Oct. 07
Begin Fall Student Registration	Oct. 12	Oct. 12
Prepare Migration Information	Oct. 14	Oct. 14
Status Review w/Program Team	Oct. 19	Oct. 19
CTE Commissioners Meeting	Oct. 20	Oct. 20
CTE Stakeholders Meeting	Oct. 22	Oct. 22
Complete Build 29 Updates	Oct. 25	Oct. 25
Approve for Migration	Oct. 25	Oct. 25
Status Review w/Project Team	Oct. 26	Oct. 26
CTE Assessment Decision Meeting	Oct. 26	Oct. 26
Readiness Review	Oct. 26	Oct. 26
Review Document Stock	Oct. 27	Oct. 27
Migration/Production Testing	Oct. 28	Oct. 28
Complete Student Registration	Oct. 29	Oct. 29
Turn on Web Application	Oct. 29	Oct. 28
CTE Assessment Cut Scores Due	Nov. 01	Oct. 26
Begin CTE Fall Assessments	Nov. 01	Nov. 01

Local Directors Meeting	Nov. 02	Nov. 02
Initial Meeting w/Print Shop	Nov. 08	Nov. 08
Status Review w/Program Team	Nov. 09	Nov. 09
Status Review w/Program Team	Nov. 16	Nov. 16
Finalize Details w/Print Shop	Nov. 18	Nov. 18
Status Review w/Program Team	Nov. 30	Nov. 30
CTE Fall 2010 Assessments End	Dec. 03	Dec. 03
Turn Off Web application	Dec. 03	Dec. 03
ADE/CTE to Generate Certificates	Dec. 03	Dec. 03
Export Data To CTEAZ (ASU)	Dec. 03	Dec. 03
Certificate Delivery to Districts	Dec. 07	Dec. 07
Statue Review/Program Team	Dec. 07	Dec. 07
Complete Build 30 Updates	Dec. 10	Jan. 04
Start Development Assessment	Jan. 05	Jan. 05
Plan CTE Spring Assessment	Jan. 11	Jan. 11
Status Review w/Program Team	Jan. 11	Jan. 11
Complete Build 31 Updates	Jan. 13	Jan. 13
Start Project Plan- Spring 2011	Jan. 17	Jan. 17
Start Dev Design/Update	Jan. 17	Jan. 17
Complete Dev Design/Scope	Jan. 21	Jan. 19
Begin Design/Coding	Jan. 25	Jan. 20
Order/Review Document Stock	Jan. 25	Jan. 25
Plan Spring 2011 Webinars	Jan. 25	Jan. 25
Status Review w/Program Team	Jan. 25	Jan. 25
Begin ADE IT Portal	Jan. 27	Jan. 27
Local Directors Meeting	Feb. 02	Feb. 02
Finalize Assessment Project Plan	Feb. 08	Feb. 08
Status Review w/Program Team	Feb. 08	Feb. 08
Complete Dev Unit Test	Feb. 10	Feb. 10
Complete Build 32 Updates	Feb. 10	Feb. 10
CTE Assess. Spring Catalog Due	Feb. 15	Feb.14
Complete Dev Unit Test	Feb. 17	Feb.17
Start QA Testing – Security	Feb. 18	Feb. 18
Cut Score Committee Meeting	Feb. 18	Feb. 18
Feedback/Approve Project Plan	Feb. 22	Feb. 22
CTE Assess. In-Process Review	Feb. 22	Feb. 22
Status Review w/Program Team	Feb. 22	Feb. 22
CTE Assessment Module Links	Feb. 25	Feb. 24
Complete QA Testing Security	Feb. 25	Feb. 25
CTE Training Modules	Feb. 25	Feb. 28
IT Web Application Review	Feb. 28	Feb. 28
Status Review w/Program Team	Mar. 01	Mar. 01
Update CTE Assessment Manual	Mar. 01	Mar. 01
Prepare Migration Info.	Mar. 02	Mar. 01
Complete Build 33 Updates	Mar. 03	Mar. 01
Approve For Migration	Mar. 03	Mar. 01
Complete ADE IT Portal	Mar. 03	Mar. 03
Turn On CTE Registration	Mar. 04	Mar. 04
CTE Stakeholders Meeting	Mar. 04	Mar. 04
Begin Fall Student Registration	Mar. 07	Mar. 07
CTE Local Directors Meeting	Mar. 10	Mar. 10

CTE Assessment Cut Scores Due	Mar. 15	Mar. 04
Status Review w/Program Team	Mar. 15	Mar. 15
Status Review- Audio Conf.	Mar. 22	Mar. 22
CTE Assess. Decision Meeting	Mar. 22	Mar. 22
Readiness Review	Mar. 22	Mar. 22
Prepare Migration Info.	Mar. 23	Mar. 23
Complete Build 34 Updates	Mar. 23	Mar. 23
Approve For Migration	Mar. 23	Mar. 23
Migration/Production Testing	Mar. 24	Mar. 24
Complete Student Registration	Mar. 25	Mar. 25
Turn On Web Application	Mar. 25	Mar. 25
Begin CTE Spring Assessments	Mar. 28	Mar. 28
Status Review w/Program Team	Mar. 29	Mar. 29
Follow-up Meeting w/Print Shop	Apr. 01	Apr. 01
Review Document Stock	Apr. 01	Apr. 01
Status Review w/Program Team	Apr. 05	Apr. 05
Status Review w/Program Team	Apr. 12	Apr. 12
Finalize Details w/Print Shop	Apr. 15	Apr. 15
CTE Spring 2011Assessment End	May 05	May 05
Turn Off Web Application	May 05	May 05
ADE/CTE to Generate Certificates	May 05	May 05
CTEAZ Import by ASU WEDO	May 10	May 07
Certificate Delivery to Districts	May 10	May 09
Received by All Districts	May 11	May 11
CTE Stakeholders Meeting	May 17	May 17
Status Review w/Program Team	May 17	May 17
Complete Build 35 Updates	May 17	May 17
Approve For Migration	May 17	May 17
Skills Commission Meeting	May 24	May 24
CTE Assessment Strategy Mtg.	May 26	May 26
Prepare Migration Info.	June 05	June 05
Complete Build 36 Updates	June 05	June 05
Approve For Migration	June 07	June 07
Migration/Production Testing	June 09	June 09
ASU WEDO Summer Institute	June 6-17	June 17
Status Review w/Program Team	June 21	June 21
CTE Stakeholders Meeting	June 23	
Prepare Migration Info.	June 27	
Status Review w/Program Team	June 28	
Prepare Migration Info.	June 28	
Complete Build 37 Updates	June 28	
Approve For Migration	June 28	
Migration/Production Testing	June 30	
Status Review w/Program Team	July 12	
2011ACTE Summer Conference	July 15	
CTE Local Directors Meeting	July 17	
CTE Stakeholders Meeting	July 17	
Arizona Skills Commission	July 17	
CTE Summer Assessments I	July 17	
CTE Summer Assessments II	July 18	
Lessons Learned Review	TBD	

CTE Assessments

Spring 2008
13 programs

Fall 2008
24 programs

Spring 2009
30 programs

Spring 2010
49 programs

Fall 2010
51 programs

Spring 2011
51 programs
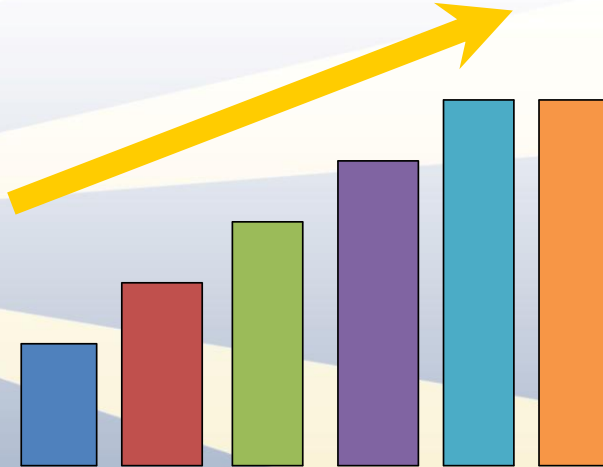
Arizona Department of Education in partnership with Arizona State University

ARIZONA ONLINE END-OF-PROGRAM TECHNICAL ASSESSMENT PROGRESS REPORT

CIP Code	CTE PROGRAMS/PROGRAM OPTIONS	2008	2009	Spring 2010	Fall 2010	Spring 2011
01.0100.0	Environmental Service Systems *Option G*			●	●	●
01.0100.2	Food Products & Processing Systems *Option A*					
01.0100.3	Plant Systems *Option B*	●	●	●	●	●
01.0100.4	Animal Systems *Option C*	●	●	●	●	●
01.0100.5	Natural Resources Systems *Option D*			●	●	●
01.0100.9	Agribusiness Systems *Option F*	●	●	●	●	●
01.0100.6	Power, Structural & Technical Systems *Option E*					
10.0200.2	Electronic Journalism *Option A*					
10.0200.3	Interactive Digital Media *Option B*					
10.0200.4	Audio/Radio Technologies *Option C*					
10.0300.2	Graphic Arts *Option A*					
10.0300.3	Graphic Design *Option B*					
10.0300.4	Photo Imaging *Option C*					
12.0400.1	Cosmetology					
12.0500.0	Culinary Arts	●	●	●	●	●
13.1200.1	Education Professions	●	●	●	●	●
13.1210.1	Early Childhood Education			●	●	●
15.0000.1	Engineering Sciences			●	●	●
15.0300.1	Electronic Technologies					
15.1200.2	Computer Maintenance *Option A*			●	●	●
15.1200.3	Network Technologies *Option B*			●	●	●
15.1200.4	Software Development *Option C*			●	●	●
15.1200.5	Web Page Development *Option D*			●	●	●
15.1300.2	Architectural Drafting *Option A*	●	●	●	●	●
15.1300.3	Electronics Drafting *Option C*	●	●	●	●	●
15.1300.4	Mechanical Drafting *Option D*	●	●	●	●	●
41.0100.2	Bio-medical *Option A*			●	●	●
41.0100.3	Bio-environmental *Option B*			●	●	●
41.0100.4	Bio-innovations *Option C*			●	●	●
43.0100.1	Law, Public Safety & Security			●	●	●
43.0200.1	Fire Service			●	●	●
46.0300.2	Residential Electrician *Option A*					
46.0300.3	Industrial Electrician *Option B*					
46.0400.2	Advanced Construction Technologies *Option A*	●	●	●	●	●
46.0400.3	Carpentry *Option B*	●	●	●	●	●
46.0400.4	Cabinetmaking *Option C*	●	●	●	●	●
47.0100.1	Electrical Systems Installation & Maintenance Technologies					
47.0200.1	Heating, Ventilation & Air Conditioning					
47.0300.0	Heavy/Industrial Equipment Maintenance Technologies					
47.0600.2	Automotive Technologies *Option A*	●	●	●	●	●
47.0600.6	General Service Technician *Option E*					
47.0600.3	Automotive Collision Repair *Option B*	●	●	●	●	●
47.0600.4	Diesel Engine Repair *Option C*					
47.0600.5	Aircraft Mechanics *Option D*	●	●	●	●	●
48.0500.2	Automation/Robotics *Option A*			●	●	●
48.0500.3	Precision Machining *Option B*				●	●
48.0508.1	Welding Technologies			●	●	●
49.0100.0	Air Transportation					
49.0200.1	Heavy Equipment Operations					
50.0100.1	Technical Theatre *Option A*			●	●	●
50.0100.3	Arts Management *Option B*			●	●	●
51.0600.1	Dental Assisting					
51.0800.2	Pharmacy Support Services *Option A*		●	●	●	●
51.0800.3	Laboratory Assisting *Option B*	●	●	●	●	●
51.0800.4	Medical Imaging Support Services *Option C*					

CIP Code	CTE PROGRAMS/PROGRAM OPTIONS	2008	2009	Spring 2010	Fall 2010	Spring 2011
51.0800.5	Sports Medicine & Rehabilitation Services *Option D*	●	●	●	●	●
51.0800.6	Medical Assisting Services *Option E*	●	●	●	●	●
51.0900.2	Respiratory Therapy Technician *Option A*					
51.0900.3	Emergency Medical Services *Option B*	●	●	●	●	●
51.0900.4	Surgical Technician *Option C*		●	●	●	●
51.1500.1	Mental & Social Health Services					
51.1600.1	Nursing Services	●	●	●	●	●
51.3500.1	Therapeutic Massage		●	●	●	●
52.0200.0	Business Management & Administrative Services	●	●	●	●	●
52.0300.0	Accounting & Related Services	●	●	●	●	●
52.0400.0	Business Operations Support & Assistant Services			●	●	●
52.0800.1	Financial Services	●	●	●	●	●
52.0900.1	Hospitality Management				●	●
52.1800.2	Professional Sales & Marketing *Option A*		●	●	●	●
52.1800.4	Entertainment Marketing *Option C*		●	●	●	●
52.1800.5	Entrepreneurship *Option D*		●	●	●	●
52.1800.3	Advertising & Public Relations *Option B*			●	●	●
52.1900.2	Fashion Design & Merchandising *Option A*	●	●	●	●	●
52.1900.3	Interior Design & Merchandising *Option B*	●	●	●	●	●
74 CTE PROGRAMS/PROGRAM OPTIONS	**ASSESSMENTS TOTALS ➢**	**24**	**30**	**49**	**51**	**51**

Process Steps

1. Research and develop a draft of program standards and measurement criteria.
2. Validate standards and measurement criteria and determine "criticality" and "frequency" ratings.
3. Obtain endorsements of standards from professional associations and agencies.
4. Present standards to the Arizona Skills Commission for their approval.
5. Develop assessment items and link to standards and measurement criteria.
6. Assemble and deliver practice and end-of-program assessments.
7. Analyze assessment items and delete, move, modify, and add items to the assessment banks

Efforts to establish and maintain the Arizona Skill Standards Assessment System involve the ongoing review of standards and measurement criteria and the continuous building of item banks.

ADE Online Delivery System on State Platform
Assessment Administration

◆ **Technical Skills Assessments – Spring 2009**
  ■ 30 final assessments were offered
  ■ 10,446 secondary students assessed

◆ **Technical Skills Assessments – Spring 2010**
  ■ 49 assessments offered
  ■ 15,055 secondary students assessed; 1 community college program involved

◆ **Certificate and Transcript Distribution – Spring 2010**
  ■ 12,272 certificates and transcripts delivered

◆ **Certificate and Transcript Distribution – Spring 2011**
  ■ 12, 795 certificates and transcripts delivered

FALL 2010 TESTING RESULTS AND SPRING 2011 TESTING RESULTS

CIP	PROGRAM/PROGRAM OPTION	Fall 2010		Spring 2011		
		Total Student Count*	Percentage Passed	Total Student Count**	Percentage Passed	Certificates Awarded
52.0300.0	Accounting and Related Services	121	38%	126	68%	86
46.0400.2	Advanced Construction Technologies Option A	495	52%	464	71%	329
52.1800.3	Advertising and Public Relations Option B	42	57%	37	73%	27
01.0100.9	Agribusiness Systems Option F	61	72%	75	77%	58
47.0600.5	Aircraft Mechanics Option D	33	85%	25	76%	19
01.0100.4	Animal Systems Option C	269	68%	283	77%	219
15.1300.2	Architectural Drafting Option A	442	65%	409	85%	346
50.0100.3	Arts Management Option B	No test takers				
48.0500.2	Automation/Robotics Option A	10	80%	13	69%	9
47.0600.3	Automotive Collision Repair Option B	168	82%	152	88%	134
47.0600.2	Automotive Technologies Option A	674	58%	755	77%	582
41.0100.3	Bio-Environmental Option B	No test takers				
41.0100.4	Bio-Innovations Option C	53	98%	67	100%	67
41.0100.2	Bio-Medical Option A	98	77%	112	88%	99
52.0200.0	Business Management & Administrative Services	695	60%	723	87%	628
52.0400.0	Business Operations Support & Assistant Services	139	64%	148	80%	118
46.0400.4	Cabinetmaking Option C	322	55%	336	69%	231
46.0400.3	Carpentry Option B	149	75%	119	77%	92
15.1200.2	Computer Maintenance Option A	345	52%	269	71%	190
12.0500.0	Culinary Arts	3087	84%	2972	93%	2774
13.1210.0	Early Childhood Education	1329	46%	1299	71%	924
13.1200.0	Education Professions	179	59%	228	89%	204
15.1300.3	Electronic Drafting Option B	5	100%	2	100%	2
51.0900.3	Emergency Medical Services Option B	144	93%	36	100%	36
15.0000.0	Engineering Sciences	218	64%	297	87%	257
52.1800.4	Entertainment Marketing Option C	79	37%	149	84%	125
52.1800.5	Entrepreneurship Option D	191	73%	235	86%	202
01.0100.0	Environmental Service Systems Option G	No test takers				
52.1900.2	Fashion Design and Merchandising Option A	374	57%	437	77%	335
52.0800.0	Financial Services	55	53%	93	70%	65
43.0200.0	Fire Service	245	63%	234	81%	190
52.0900.0	Hospitality Management	182	93%	130	99%	129

52.1900.3	Interior Design and Merchandising Option B	56	77%	58	95%	55
51.0800.3	Laboratory Assisting Option B	72	21%	99	61%	60
43.0100.0	Law, Public Safety and Security	428	46%	639	76%	485
15.1300.4	Mechanical Drafting Option C	186	75%	198	89%	176
51.0800.6	Medical Assisting Services Option E	124	67%	196	64%	126
01.0100.5	Natural Resources Systems Option D	35	63%	35	71%	25
15.1200.3	Network Technologies Option B	126	57%	139	73%	101
51.1600.0	Nursing Services	966	60%	854	90%	769
51.0800.2	Pharmacy Support Services Option A	42	40%	44	70%	31
01.0100.3	Plant Systems Option B	344	59%	321	81%	260
48.0500.3	Precision Machining Option B	56	55%	65	75%	49
52.1800.2	Professional Sales and Marketing Option A	774	57%	782	84%	655
15.1200.4	Software Development Option C	194	66%	248	64%	159
51.0800.5	Sports Medicine & Rehab Services Option D	715	25%	733	74%	546
51.0900.4	Surgical Technician Option C	No test takers				
50.0100.2	Technical Theatre Option A	185		196	77%	151
51.3500.0	Therapeutic Massage	No test takers		88	65%	57
15.1200.5	Web Page Development Option D	300	49%	286	61%	175
48.0508.0	Welding Technologies	623	54%	601	73%	438
	Totals	15,430		15,807		12,795

*Practice test-takers
** Final test-takers

Information compiled by WEDO / July 2011
SOURCE: Fall 2010 and Spring 2011 Total Results Report

ARIZONA SKILL STANDARDS COMMISSION

ARIZONA STATE
DEPARTMENT OF EDUCATION

WORKFORCE EDUCATION
AND DEVELOPMENT OFFICE

JOHN HUPPENTHAL, Co-Chair
Superintendent of Public Instruction

CAROLYN WARNER, Co-Chair
President, Corporate//Education Consulting, Inc.

DON ADAMS
Director, Human Resources
Basha's

BRANDON AMES
CEO
ABLE Info. Technologies

JESSE ARY
Realtor
HomeSmart, Inc.

DEBORAH BATEMAN
Exec. VP, Specialty Banking & Mkting
National Bank Of Arizona

BETSEY BAYLESS
CEO
Maricopa Integrated Health Sys.

ART BROOKS
President & CEO
AZ Broadcasters Assn.

JIM CAMPBELL
President
Qwest AZ

SUSAN CARLSON
Executive Director
AZ Business & Education Coalition

JON CHERRY
President
Resolution Copper

BRUCE COOMER
Executive Director
AZ Assn for Economic Dev.

MARK DOBBINS
Senior Vice President
SUMCO Phoenix

KENNY EDWARDS
Manager Learning & Dev.
Salt River Project

SCOTT ELLISON
General Mgr., AZ Operations
Turner Construction Company

SYBIL FRANCIS
Executive Director
Center For The Future Of Arizona

JEFFREY FREEMAN
Director, Business. Partnerships
Honeywell

REBEKAH FRIEND
Exec. Dir., Secretary/Treasurer
Arizona AFL-CIO

ERNEST GARFIELD
Interstate Bank Developers, Inc.

RUFUS GLASPER
Chancellor
Maricopa Community Colleges

MARYANN GUERRA
President
Catapult BioAccel

GLENN HAMER
President & CEO
AZ Chamber of Commerce & Industry

WILLIAM C. HARRIS
President & CEO
Science Foundation Arizona

LINDA HUNT
President
St. Joseph's Hospital & Medical Center

DEBBIE JOHNSON
President & CEO
AZ Hotel & Lodging Association

MAXINE M. JONES
President
AIMCO Precision, Inc.
Sec'y, AZ Tooling & Machining Assn

JIM KLINKER
Chief Administrative Officer
AZ Farm Bureau Federation

PAUL KOEHLER
Director, Policy Center
WestEd

T.J. MARTIN
Commander
Phoenix Police Dept.

BOB MAYO
Managing Partner
Roy's Marriott Desert Ridge

SHIRLEY L. MAYS
Dean
Phoenix School of Law

CATHY MCKEE OLESEN
Senior Vice President (Ret.)
General Dynamics C4S

KARLA PHILLIPS
Education Policy Advisor
Office of the Governor

DOUG PRUITT
President & CEO
Sundt Construction

PAT QUINN
President (Ret.)
Qwest Arizona

KNOX RAMSEY
President
Valley Auto Dealers Assn.

THOMAS REDICKS
Adv. Bd. Member, Pima Cnty JTED
President, Tutorlink, LLC

PAT ROURKE
President
Bankers Trust

OMAR SAYED
CEO
Succeed Corp.

JOSEPH SHELLEY
Commander
Mesa Police Department

DONALD G. SHROPSHIRE
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Tucson Medical Center

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AZ Hospital & Healthcare Assn.

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Superintendent, Yuma County Schools

MORRISON WARREN
Senior Vice President
Chase Bank

MARYANNE WEISS
President
Gustare LTD.

JAMES ZAHARIS
Vice President For Education
Greater Phoenix Leadership, Inc.

May 6, 2011

Congratulations!

You have passed the Arizona Skill Standards Commission's Spring 2011 end-of-program assessment based on industry skill standards in your selected career field.

We encourage you to continue your education in your desired career pathway. It is our intent that the enclosed certificate and transcript will enable you to provide an employer with specific information about the industry skills you possessed upon completion of your program.

Should you have a need for an additional transcript in the next four years, you may contact Career and Technical Education at the Arizona Department of Education.

Best wishes for your future success.

John Huppenthal, Co-chair
Arizona Skill Standards Commission
Superintendent of Public Instruction
Arizona Department of Education

Carolyn Warner, Co-chair
Arizona Skill Standards Commission

Certificate of Arizona Skill Standards

Arizona Skill Standards Commission

certifies that

CTE Student

ANY HIGH SCHOOL

has successfully passed the

FIRE SERVICE
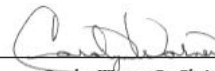
Spring 2011

End-of-program Assessment

Arizona Department of Education Career and Technical Education in partnership with Arizona State University Workforce Education and Development Office

John Huppenthal, Co-Chair
Arizona Skill Standards Commission
Superintendent of Public Instruction
Arizona Department of Education

Carolyn Warner, Co-Chair
Arizona Skill Standards Commission

CTE Student

ANY HIGH SCHOOL

FIRE SERVICE

Skill Standards Attainment

KNOW AND COMPLY WITH FIRE SERVICE SAFETY POLICIES AND PROCEDURES

Identify safety standards related to fire service, such as NFPA 1500 and OSHA

Explain appropriate safety precautions in fire stations and facilities

Practice personal safety in learning and training

Describe basic principles of Crew Resource Management (CRM) and the Error-chain

DEMONSTRATE THE PROPER USE AND MAINTENANCE OF FIREFIGHTING PERSONAL PROTECTIVE EQUIPMENT (PPE)

Identify various protective equipment that comprises the firefighter's ensemble

Demonstrate the care of personal protective equipment

Demonstrate donning and doffing of PPE within one minute

Identify the components of a self-contained breathing apparatus (SCBA)

Describe respiratory hazards and when an SCBA shall be "used"

Practice donning and doffing SCBA

Explain principles of Air Management consistent with NFPA 1404

Demonstrate replacement of SCBA air cylinders

DEMONSTRATE PROPER USE OF GROUND LADDERS

Define the basic parts of a ladder

Demonstrate ladder inspection and maintenance

Demonstrate one and two firefighter ladder carries

Demonstrate ground ladder positioning

Demonstrate procedures for raising and climbing ladders

Demonstrate one and two firefighter ladder raises

Demonstrate procedures for moving ground ladders

DEMONSTRATE THE SELECTION, USE, AND CARE OF FIRE HOSE

Identify various fire hose sizes and applications

Describe fire hose damage and general care

Identify types of fire hose couplings (male, female) and care of couplings

Describe various hose appliances and hose tools

Demonstrate a straight roll, donut roll, twin donut roll, and self-locking twin donut roll

Recognize an accordion, horseshoe, and flat hose load

Recognize a pre-connected attack line flat load and a triple layer load

ADE CTE Assessment System
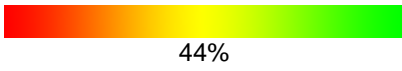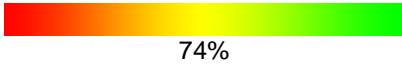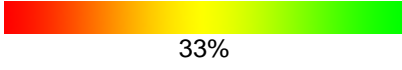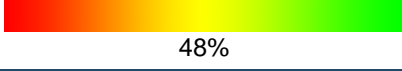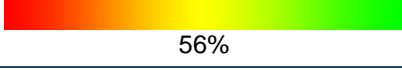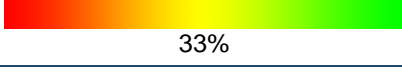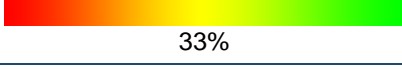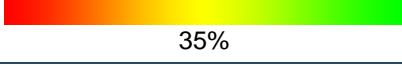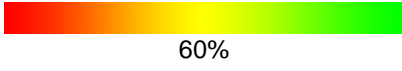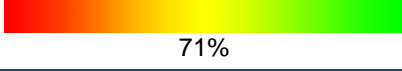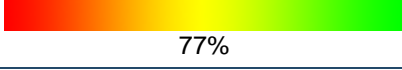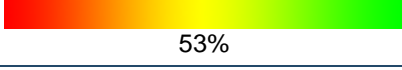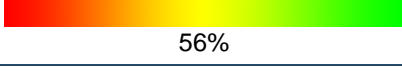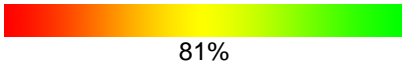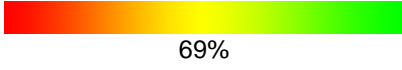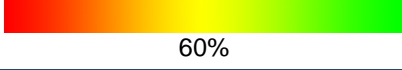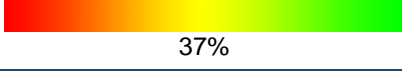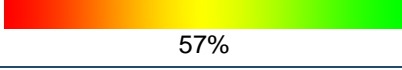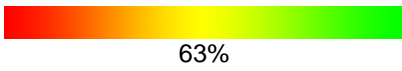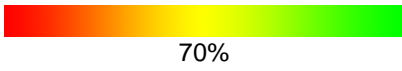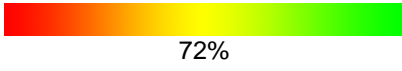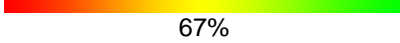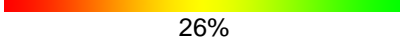
Standards And Measurement Criteria Results Report

Assessment: ACCOUNTING AND RELATED SERVICES
Students In Set: 127
Filters Used
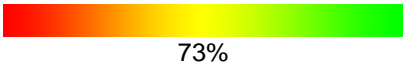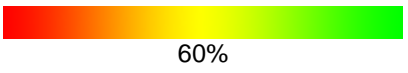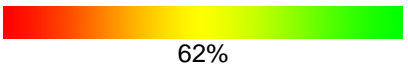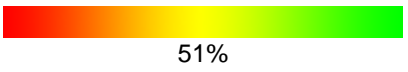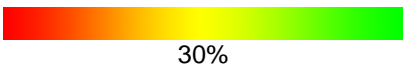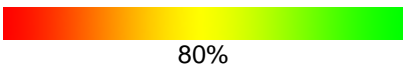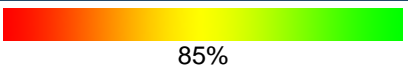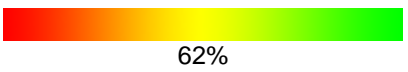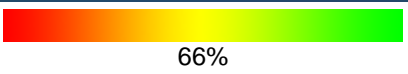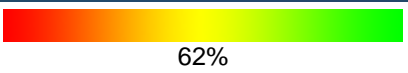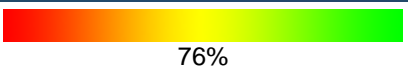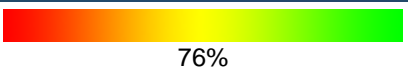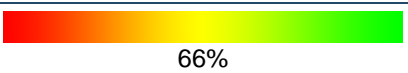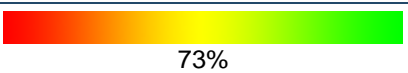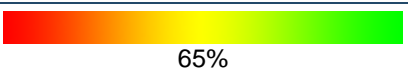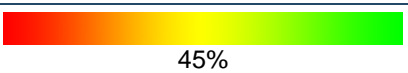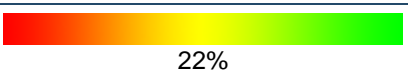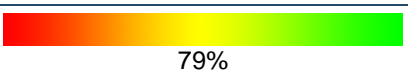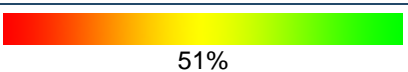
Standard/Measurement Criterion	Percentage Correct
DEMONSTRATE BUSINESS AND FINANCIAL MANAGEMENT PRACTICES NEEDED FOR ENTREPRENEURS	
Review a budget based on an accounting enterprise's business plan	33%
Review an income statement for an accounting enterprise	65%
Review a balance sheet for an accounting enterprise	9%
Interpret financial information for decision making and planning	22%
Monitor and adjust a business operation based on financial performance	42%
Compare foreign currencies and determine how business affects exchange rates	45%
Describe the impact of quality business communications on the success of an accounting organization	31%
Manage customer relations	70%
Review insurance needs for a business and its relationship to all aspects of the business	70%
DEMONSTRATE THE STEPS OF THE ACCOUNTING CYCLE	
Explain the purpose of the accounting cycle	65%
Define terminology related to the accounting cycle	48%
Demonstrate the fundamental accounting equation	59%
Classify items as assets, liabilities, or owner's equity	51%
Determine how owner's equity is affected by revenue, expense, and drawing accounts	52%
Practice the double-entry system of accounting	88%

Analyze the effect that business transactions have on the basic accounting equation using source documents	44%
Develop the process of journalizing business transactions	74%
Explain the relationship of the journal to the ledger	33%
Post transactions from the journal to the ledger	48%
Prepare the trial balance including determining necessary adjustments	56%
Prepare financial statements	33%
Explain the purposes of the closing process	33%
Prepare a post-closing trial balance	35%

DETERMINE PAYROLL

Prepare payroll records using manual and computerized systems	60%
Calculate earnings for various methods of payment	71%
Compute deductions to determine net pay	77%
Calculate employer's payroll taxes	53%
Prepare federal, state, and local payroll reports	56%

GENERATE PROCEDURES FOR CASH CONTROL

Define petty cash	81%
Complete check stubs or register and checks manually using general ledger accounting software	69%
Enter appropriate data on a deposit slip	60%
Reconcile a bank statement	37%
Establish procedures for managing and reconciling petty cash manually and electronically	57%

DETERMINE PROCEDURES FOR ACCOUNTS RECEIVABLE AND ACCOUNTS PAYABLE

Establish and maintain the accounts receivable subsidiary ledger	63%
Process sales orders and invoices	70%
Process customer payments	72%
Analyze accounts receivable using an aging schedule to determine doubtful accounts	

		22%
	Establish and maintain the accounts payable subsidiary ledger	52%
	Maintain vendor files	58%
	Process invoices for payment	53%
	Process accounts payable checks	66%
	Explain the relationship of subsidiary ledgers	62%
EVALUATE ASSETS, LIABILITIES, AND OWNER'S EQUITY		
	Define terminology related to assets and liabilities	50%
	Explain the purposes of notes receivable	68%
	Maintain inventory records	25%
	Apply inventory costing procedures, such as FIFO, LIFO and weighted average	37%
	Compute the cost basis of assets	62%
	Calculate depreciations	59%
	Identify procedures to protect assets from loss, waste, theft, forgery and embezzlement	59%
	Determine current and long-term liabilities and assets	70%
	Apply the revenue realization and matching principles to an income statement for service and merchandising businesses	51%
	Determine cost of goods sold and gross profit for merchandising and manufacturing businesses	55%
APPRAISE FORMS OF BUSINESS OWNERSHIP		
	Ascertain the source and the importance of following the Generally Accepted Accounting Principles (GAAP)	37%
	Differentiate between taxation at the personal and business level	29%
	Explain the purpose of the capital and drawing accounts for a sole proprietorship and partnership	71%
	Apply appropriate accounting techniques to account for investments and withdrawals by owners	60%
	Explain the purpose of the following accounts: common stock, preferred stock, paid-in capital, retained earnings, and dividends for a corporation	67%
	Identify the three basic types of business activities- operating, investing, and financing	26%
	Identify not-for-profit and governmental organizations accounting requirements	

	68%
ASSESS THE FINANCIAL PERFORMANCE OF A BUSINESS	
Analyze the income statement and balance sheet of a business	73%
Analyze current and long-term assets including their impact on the financial statements	60%
Analyze current and long-term liabilities including their impact on the financial statements	62%
Analyze the statement of cash flow and the effect on healthy performance	51%
Calculate merchandise inventory turnover ratios	30%
Determine the effect of changes in sales volume, unit costs and unit sales process on net income	80%
USE ACCOUNTING TECHNOLOGY IN MANAGING FINANCIAL INFORMATION	
Using spreadsheet software, organize, calculate and complete an accounting financial statement	85%
Make projections using "what if" statements	62%
Use spreadsheet and/or accounting software to prepare charts and graphs useful in analyzing the financial condition of a business	66%
EXAMINE ETHICAL STANDARDS IN ACCOUNTING	
Differentiate between ethical and legal issues	62%
Describe social responsibility in accounting	76%
Explain the importance of high ethical standards in the preparation of financial statements	76%
EXPLORE ECONOMIC PRINCIPLES OF MANAGERIAL ACCOUNTING AND RELATED SERVICES PROFESSIONS	
Define the five management functions: planning, organizing, directing, staffing, and controlling	66%
Define cost concepts and cost behavior	73%
Explain the role of accounting as utilized in support of the five management functions and related decision making	65%
Define the differences among service, merchandising and manufacturing businesses	45%
EXPLORE ACCOUNTING AND RELATED SERVICES SYSTEMS THEORY AND PRACTICE	
Demonstrate basic research techniques to organize accounting records and information	22%
Explain how work plans and budget information are used to allocate people and resources effectively	79%
Investigate merchandise inventory accounting principles that relate to budgetary decisions	51%

Student Status Report

Name	Correct	Wrong	Skipped	Percent
DEMONSTRATE BUSINESS AND FINANCIAL MANAGEMENT PRACTICES NEEDED FOR ENTREPRENEURS				
Review a budget based on an accounting enterprise's business plan	42	85	3	33%
Review an income statement for an accounting enterprise	83	44	3	65%
Review a balance sheet for an accounting enterprise	12	115	1	9%
Interpret financial information for decision making and planning	29	98	2	22%
Monitor and adjust a business operation based on financial performance	54	73	2	42%
Compare foreign currencies and determine how business affects exchange rates	116	138	3	45%
Describe the impact of quality business communications on the success of an accounting organization	40	87	1	31%
Manage customer relations	178	76	2	70%
Review insurance needs for a business and its relationship to all aspects of the business	90	37	1	70%
DEMONSTRATE THE STEPS OF THE ACCOUNTING CYCLE				
Explain the purpose of the accounting cycle	83	44	1	65%
Define terminology related to the accounting cycle	62	65	1	48%
Demonstrate the fundamental accounting equation	76	51	2	59%
Classify items as assets, liabilities, or owner's equity	66	61	1	51%
Determine how owner's equity is affected by revenue, expense, and drawing accounts	67	60	1	52%
Practice the double-entry system of accounting	112	15	1	88%
Analyze the effect that business transactions have on the basic accounting equation using source documents	57	70	1	44%
Develop the process of journalizing business transactions	95	32	1	74%
Explain the relationship of the journal to the ledger	42	85	1	33%
Post transactions from the journal to the ledger	62	65	1	48%
Prepare the trial balance including determining necessary adjustments	72	55	2	56%
Prepare financial statements	43	84	2	33%
Explain the purposes of the closing process	43	84	1	33%
Prepare a post-closing trial balance	45	82	1	35%
DETERMINE PAYROLL				
Prepare payroll records using manual and computerized systems	154	100	2	60%
Calculate earnings for various methods of payment	274	107	4	71%
Compute deductions to determine net pay	198	56	5	77%
Calculate employer's payroll taxes	68	59	4	53%
Prepare federal, state, and local payroll reports	72	55	2	56%
GENERATE PROCEDURES FOR CASH CONTROL				
Define petty cash	103	24	1	81%
Complete check stubs or register and checks manually using general ledger accounting software	88	39	2	69%
Enter appropriate data on a deposit slip	308	200	4	60%
Reconcile a bank statement	95	159	8	37%

Establish procedures for managing and reconciling petty cash manually and electronically	73	54	2	57%
DETERMINE PROCEDURES FOR ACCOUNTS RECEIVABLE AND ACCOUNTS PAYABLE				
Establish and maintain the accounts receivable subsidiary ledger	81	46	1	63%
Process sales orders and invoices	90	37	1	70%
Process customer payments	92	35	2	72%
Analyze accounts receivable using an aging schedule to determine doubtful accounts	28	99	2	22%
Establish and maintain the accounts payable subsidiary ledger	67	60	2	52%
Maintain vendor files	74	53	2	58%
Process invoices for payment	137	117	4	53%
Process accounts payable checks	84	43	2	66%
Explain the relationship of subsidiary ledgers	80	47	3	62%
EVALUATE ASSETS, LIABILITIES, AND OWNER'S EQUITY				
Define terminology related to assets and liabilities	127	127	2	50%
Explain the purposes of notes receivable	174	80	2	68%
Maintain inventory records	32	95	4	25%
Apply inventory costing procedures, such as FIFO, LIFO and weighted average	48	79	2	37%
Compute the cost basis of assets	80	47	2	62%
Calculate depreciations	151	103	6	59%
Identify procedures to protect assets from loss, waste, theft, forgery and embezzlement	76	51	1	59%
Determine current and long-term liabilities and assets	90	37	1	70%
Apply the revenue realization and matching principles to an income statement for service and merchandising businesses	130	124	4	51%
Determine cost of goods sold and gross profit for merchandising and manufacturing businesses	70	57	3	55%
APPRAISE FORMS OF BUSINESS OWNERSHIP				
Ascertain the source and the importance of following the Generally Accepted Accounting Principles (GAAP)	47	80	3	37%
Differentiate between taxation at the personal and business level	38	89	3	29%
Explain the purpose of the capital and drawing accounts for a sole proprietorship and partnership	91	36	1	71%
Apply appropriate accounting techniques to account for investments and withdrawals by owners	154	100	6	60%
Explain the purpose of the following accounts: common stock, preferred stock, paid-in capital, retained earnings, and dividends for a corporation	172	82	2	67%
Identify the three basic types of business activities- operating, investing, and financing	34	93	1	26%
Identify not-for-profit and governmental organizations accounting requirements	87	40	3	68%
ASSESS THE FINANCIAL PERFORMANCE OF A BUSINESS				
Analyze the income statement and balance sheet of a business	187	67	3	73%
Analyze current and long-term assets including their impact on the financial statements	153	101	3	60%
Analyze current and long-term liabilities including their impact on the financial statements	79	48	1	62%
Analyze the statement of cash flow and the effect on healthy performance	132	122	3	51%
Calculate merchandise inventory turnover ratios	39	88	4	30%
Determine the effect of changes in sales volume, unit costs and unit sales process on net income	102	25	2	80%
USE ACCOUNTING TECHNOLOGY IN MANAGING FINANCIAL INFORMATION				
Using spreadsheet software, organize, calculate and complete an accounting financial statement	109	18	2	85%
Make projections using "what if" statements	79	48	1	62%
Use spreadsheet and/or accounting software to prepare charts and graphs useful in analyzing the financial condition of a business	85	42	1	66%
EXAMINE ETHICAL STANDARDS IN ACCOUNTING				
Differentiate between ethical and legal issues	158	96	5	62%
Describe social responsibility in accounting	97	30	1	76%

	Explain the importance of high ethical standards in the preparation of financial statements	97	30	3	76%
EXPLORE ECONOMIC PRINCIPLES OF MANAGERIAL ACCOUNTING AND RELATED SERVICES PROFESSIONS				
	Define the five management functions: planning, organizing, directing, staffing, and controlling	170	84	3	66%
	Define cost concepts and cost behavior	93	34	3	73%
	Explain the role of accounting as utilized in support of the five management functions and related decision making	83	44	1	65%
	Define the differences among service, merchandising and manufacturing businesses	58	69	2	45%
EXPLORE ACCOUNTING AND RELATED SERVICES SYSTEMS THEORY AND PRACTICE				
	Demonstrate basic research techniques to organize accounting records and information	28	99	1	22%
	Explain how work plans and budget information are used to allocate people and resources effectively	101	26	3	79%
	Investigate merchandise inventory accounting principles that relate to budgetary decisions	65	62	2	51%
Total		7,251	5,449	178	57%

Score Distribution Report

Assessment Period: Spring 2011
Assessment: 52.0300.0 ACCOUNTING AND RELATED SERVICES
Completion Status: All
Gender: All
Special Population: All
Grade Level: All
School of Attendance/Residence: School of Attendance

Statistic	Raw	Percent
Participants	127	N/A
Items	100	N/A
Time Limit	180	N/A
Mean Time	29	N/A
Max Time	146	N/A
Min Time	4	N/A
Pass Score	50	N/A
Passed	86	68%
Failed	41	32%
Mean Score	57	56%
Mode Score	56	56%
Median Score	59	59%
Range	89	89%
Standard Deviation	16.1	16%
Min	0	0%
Max	89	89%

Percent of Students

Percent Correct

46
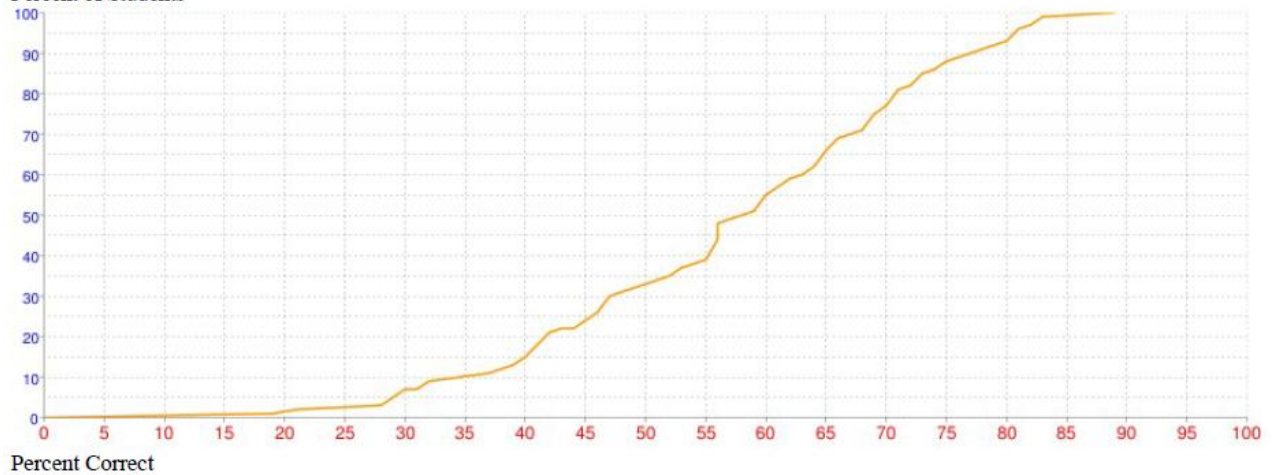
Spring 2011 - CTE Assessment Zoomerang Survey Results

	Fall 2008 N = 47	Spring 2009 N = 60	Spring 2010 N = 36	Fall 2010 N = 51	Spring 2011 N = 46
Communication	44.7% Very Good/ Excellent	43.3% Very Good/ Excellent	35.3% Very Good/ Excellent	49.0% Very Good/ Excellent	47.9% Very Good/ Excellent
Training Modules/ Webinar Training	33.0% Very Good/ Excellent	23.3% Very Good/ Excellent	40.8% Very Good/ Excellent	34.0% Very Good/ Excellent	58.0% Very Good/ Excellent
Connectivity	53.0% Very Good/ Excellent	53.7% Very Good/ Excellent	49.5% Very Good/ Excellent	50.4% Very Good/ Excellent	58.4% Very Good/ Excellent
Conducting the Assessments	51.3% Very Good/ Excellent	58.5% Very Good/ Excellent	58.5% Very Good/ Excellent	57.0 % Very Good/ Excellent	67.8% Very Good/ Excellent
Assessment Reports	23.5% Very Good/ Excellent	35.5% Very Good/ Excellent	36% Very Good/ Excellent	45.2% Very Good/ Excellent	58.0% Very Good/ Excellent
Certificates/Transcripts	N/A	N/A	52.2% Very Good/ Excellent	40.0 % Very Good/ Excellent	62.3% Very Good/ Excellent

The chart contains data from the Zoomerang Survey sent to CTE Local Directors after each assessment window. The percentage reflects the average number of items in each survey category. The only data used was that at the very good/excellent level. This document does not reflect all responses to each question.

The following represent broad observations from Spring 2011 responses:

Strengths
- New Training Modules are available 24/7
- Increased ADE Network's Ram provided quicker response time during testing
- Immediate test results motivate students
- Proctor Script is readily available allowing districts quick access
- Report generation speed has increased
- Reports allow districts/teachers to address gaps in curriculum within their districts
- Certificates and Transcripts were delivered in a timely manner allowing districts to distribute them at celebratory events

Opportunities to Improve
- Implement strategies to address communication concerns
- Enhance training modules
- Conduct research and provide technical assistance to ensure that the right students are testing and expand coverage
- Explore parameters for taking and re-taking CTE Assessments
- Develop additional reports based on customer requests

5/25/11

ASSESSMENT CALENDAR—July 1, 2010 through July 31, 2011

July
S M T W T F S
1 2 3
4 5 6 7 8 9 10
11 12 13 14 15 16 17
18 19 20 21 22 23 24
25 26 27 28 29 30 31

2010 ACTEAZ CONFERENCE July 17-July 21

July 17—Meet with Joyce Malyn-Smith re Workplace Employability Skills / ACTEAZ Conference
July 18—Local Directors Meeting / ACTEAZ Conference
July 18—Joint Commission-Stakeholders Meeting/ACTEAZ Conference
July 27—CTE Assessment Program Team Meeting—10:00-11:30/CTE 500
July 27—WEDO Assessment Team Meeting—8:00/ UCENT 361

August
S M T W T F S
1 2 3 4 5 6 7
8 9 10 11 12 13 14
15 16 17 18 19 20 21
22 23 24 25 26 27 28
29 30 31

August 31—CTE Assessment Program Team Meeting—10:00/CTE-Room 500

September
S M T W T F S
1 2 3 4
5 6 7 8 9 10 11
12 13 14 15 16 17 18
19 20 21 22 23 24 25
26 27 28 29 30

September 13—Final proofing of assessments—UCENT 317/9:00
September 16—Item Development Meeting for Hospitality Management—UCENT 317/8:00
September 28—Assessment Webinar Practice Session—UCENT 361
September 20—Deadline to have Fall Assessments in the ADE System
September 22—Local Directors Meeting –EVIT
September 30—Assessment Webinars 9-11/1-2:30—UCENT 361

October
S M T W T F S
1 2
3 4 5 6 7 8 9
10 11 12 13 14 15 16
17 18 19 20 21 22 23
24 25 26 27 28 29 30
31

October 1—Assessment Webinar 11:00-12:00
October 5—Assessment Webinars—9-11/1-2:30/3:00-4:00
October 12—Assessment Registration Opens
October 15—Pass Score Committee Meeting –2:00-3:30/UCENT 317
October 19—Meet with Joyce Malyn-Smith and Joe Ippolito re Workplace Employability Skills— 8:00-4:00/ UCENT 317
October 19—CTE Assessment Program Team Meeting—CTE Conference Room / 10:00
October 20—Commission Meeting—8:30-11:30/CRONK 444
October 21—Pass Score Committee Meeting—2:30 / Phone Conference
October 22—Stakeholders Meeting—8:30-12:00/MERK/340-350
October 26—CTE Assessment Program Team Meeting—CTE CR500 / 10:00

November
S M T W T F S
1 2 3 4 5 6
7 8 9 10 11 12 13
14 15 16 17 18 19 20
21 22 23 24 25 26 27
28 29 30

FALL ASSESSMENT WINDOW: November 1-December 3

November 2-4—Local Directors Meeting/ Fall Leadership Conference—Prescott Resort
November 4—WEDO Collaborative Session—ASU/University Club
November 9—CTE Assessment Team Meeting—CTE/CR500-10:00
November 16—CTE Assessment Team Meeting—CTE/10-12
November 30—Planning Meeting for Workplace Employability Road Shows--(ASU/317/9-11:30
November 30—CTE Assessment Team Meeting—CTE—ASU/317/1:00-3:00

December
S M T W T F S
1 2 3 4
5 6 7 8 9 10 11
12 13 14 15 16 17 18
19 20 21 22 23 24 25
26 27 28 29 30 31

December 2-4—2010 Annual Convention and Career Tech Expo—Las Vegas
December 7—CTE Assessment Team Meeting—CTE/10-12 (Bob-Helen-Barbara only)
December 13-17—Generate & mail transcripts and certificates for FINAL PASSERS
December 17—ASU Assessment Team—UCENT 317-11:00-4:00

January	

January
S   M   T   W   T   F   S
                                    1
2   3   4   5   6   7   8
9   10   11   12   13   14   15
16   17   18   19   20   21   22
23   24   25   26   27   28   29
30   31
	January 4—CTE Assessment Troubleshooting Committee Conference Call
	January 5—CTE Assessment Retake Conference Call
	January 6—CTE Assessment Team Meeting—UCENT 317 / 2:00
	January 8—Item Analysis/Development Meetings (Engineering, Hospitality, Machining,
	              Theatre) / MERC 300
	January 11—ADE Assessment Team—CTE CR500 / 10:00
	January 17 & 18—WEDO Assessment Team / 9:00 / UCENT 317
	January 21—Stakeholders Meeting—MERC 340-350/ 8-11:30
	January 25—ADE Assessment Team—CTE 500 / 10:00
	January 27—Commission Meeting—MERC / 8-11:30

February **S M T W T F S** 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28	**February 2-3-4**—Multimedia Meeting at MidWinter Leadership Conference—Prescott Resort **February 8**—ADE Assessment Team—CTE 500 / 10:00 **February 11**—Assessment Proctor Guide Deadline **February 15**—Spring Assessment Catalog to ADE/IT **February 15**—Deadline to Deliver Pass Scores/Spring 2011 Assessments to ADE **February 17**—Planning Meeting for Teacher Institutes / Noon-4:00 / 317 **February 18**—Pass Score Committee Meeting in P.M./ Mercado / 2nd FL BR **February 22**—CTE Assessment Team—CTE CR500 / 10:00 **FOCUS GROUPS for WORKPLACE EMPLOYABILITY SKILLS (JTED Locations)** 2/8—West-MEC (8-9:30) 2/14—PCJTED (1-4) 2/15—EVIT (9:00-11:30) 2/22—CAVIT (8:15-10:15) 2/24—MIJTED, CAVIAT, VACTE (9-Noon) 3/3—YUMA @ AZ Western CC (4:00-5:30) 3/9—WAVE @ Mohave CC (9-Noon) 3/10—NAVIT @ Northland Pioneer CC (11-3) 3/15—CVIT / Miami Library / 5:00-8:00 3/22—Phoenix Central Corridor / Phoenix Council Chamber Basement, 8:30-11:00 3/24—CTD/Cochise college Benson Center/ (1-3) 3-28- 30—Joyce-Joe to meet w/project teaM
March **S M T W T F S** 28 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	**March 1**—CTE Assessment Team **March 4**—Stakeholders Meeting—West-MEC **March 7**—Opening Registration for Spring Assessments **March 15**—CTE Assessment Team Meeting—CTE CR500 **March 15**—Deadline to Deliver Pass Scores to ADE/IT **March 29**—ADE Assessment Team Meeting—CTE CR500 **SPRING ASSESSMENT WINDOW/March 28-May 5-Noon**
April **S M T W T F S** 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	**April 5**—CTE Assessment Team Meeting—CTE CR500 **April 7**—WEDO Assessment Team Meeting re Bloom's Classification / UCENT/361 / 8:30-2:30 **April 7**—WEDO Workplace Employability Skills Meeting / UCENT 361 / 2:30 **April 11**—Teacher Institute/ Meeting—CTE/Room 100 / 9-11 **April 12**—CTE Assessment Team Meeting / CTE CR500 / 10-12 **April 14**—JTED Meeting at 11:00 (workplace employability skills update) **April 16**—WEDO Assessment Team Meeting / UCENT / 317 / 8:30 **April 18**—WEDO Assessment Team Meeting / UCENT / 317 / 8:30 **April 19**—CTE Assessment Team Meeting / CTE / CR 500 / 10-12 **April 21**—Multimedia Meeting—MERC / 8:00-3:00/145

May	
S M T W T F S 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	**May 2-3-4— Meet with Joyce Malyn-Smith re Workplace Employability Skills / UCENT** **May 6 & 7— WEDO Assessment Team/Bloom's Classification (UCENT 317 / 8:30-4:00** **May 9—Multimedia Committee to work on standards—Tempe University Club / 10-3** **May 17—Stakeholders Meeting / ASU Post Office** **May 17—CTE Assessment Team Meeting—CTE/CR500-1:30** **May 24—Commission Meeting—Chamber of Commerce—VIAD Building / Suite 1433** **May 26—CTE Assessment Team Strategic Meeting—UCENT / 9-Noon**
June **S M T W T F S** 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30	**LEAD TEACHER TRAINING: June 6 / June 13** **TEACHER INSTITUTES: June 7-8 / June 14-15** **June 2—Meet w/State Supervisors re Institutes—CTE/CR500/1:00** **June 16—Pass Score Committee—UCENT 317 / 9:00 – Noon** **June 20—CTE Meeting re Workplace Employability Skills—CTE / 9:00** **June 21—CTE Assessment Team Meeting—CTE** **June 23—Stakeholders Meeting –Flinn Foundation / 1:00-4:00**
July **S M T W T F S** 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	**2011 ACTEAZ 2011 CONFERENCE—July 16-20** **July 7—Meet re assessment labs at ACTE conference – UCENT 361 / 10:00** **July 14—Pass Score Committee Meeting / 8:30 – 11:30 – CR 317** **July 12-15—Work on Workplace Employability Skills Rubric with Joyce Malyn-Smith & Joe Ippolito / Fiesta Inn / ASU** **July 17—Local Directors Meeting / Joint Commission-Stakeholders Meeting / Westin** **July 18—Assessment Teacher Cluster Sessions at ACTEAZ Conference / Westin and Loews** **July 17 and 18—Testing Window for Teachers at Conference in PM / Westin and Loews**

July 2011

Industry Validation Meetings for Multimedia Technologies

Meeting 1

In March 2010, a small group of industry representatives were surveyed about the technical knowledge and skills high school students need to be successful in today's multimedia industry. They were asked to review and respond to a list of 20 skill areas widely recognized as the knowledge and skills needed by workers entering the multimedia marketplace. Their feedback was used to frame the work for developing the Multimedia program standards. Following are the industry people selected for this survey and some of their comments.

Industry involvement:

- Art Mobley---NPTV
- Carol Knopes---Radio Television News Directors Foundation
- Matt Self---azcentral.com/12 news
- Jody Brannon---News21/Formerly MSNBC
- Ginger Eiden---Webmaster/content manager City of Glendale
- Jaime Boyd---Univision.net
- Jeff Karnowski---KPNX-TV
- Nick Smith---Tucson Weekly/Inside Business
- Dr. Leslie-Jean Thornton---New Media and Walter Cronkite School of Journalism & Mass Communication

Comments:

- *Students must be prepared to adapt and adjust to whatever the new technology and the market will demand.*

- *The most important skills for any medium of news is being able to identify a news story, framing the angle, getting the interview, and delivering it in a way most anyone can understand.*

- *This is a HUGE task, and a very valuable resource!*

- *Cultural sensitivity, diversity, and ethics are elements that will probably fall under every concentration area.*

- *Very strong standards [are needed]. Students who succeed will have 21st Century Skills. But whether they go into multimedia journalism or not, they will have the critical thinking and hands-on skills that are crucial to full citizenship in the 21st Century.*

- *The more you know the better you will be prepared for a job in the media because the world is quickly going to multimedia journalist and operators.*

- *The focus should be more on practice rather than theory. In my limited experience, I learned more when I was out actually producing content rather than listening to a lecture in a classroom. I also think that students today have more experience in shooting pictures/video than students did 5 years ago, but telling a compelling story, whether it's with pen and paper or a Flip camera should be the goal of multimedia technologies.*

- *Students should learn that as the industry changes, the people who produce good multimedia content will be the ones employers hire and look to as news organizations adapt to the internet.*

- *I would only caution two things. An overview is essential. There must also be a great deal of honesty in terms of how all forms of media communication are in shakedown just now. Perhaps there should be more emphasis on how to work collaboratively with people of both like and unlike disciplines.*

Meeting 2

On February 2, 2011, Prescott, ADE/CTE and ASU/WEDO staff met with 33 CTE people from around the state. The purpose of this meeting was to review research on the changes in and growth of jobs/occupations in the multimedia industry, to examine how other states are designing multimedia courses, and to discuss the update of the standards and a redesign of the program/courses and the effect this will have on the schools in Arizona. Following are the people who attended this meeting.

Polly	Abraham	Coolidge USD	pabraham@coolidgeschools.net
David	Around	Eastern Arizona College	david.arond@eac.edu
Patti	Beltram	Peoria USD	pbeltram@peoriaud.k12.az.us
Amy	Bemis	Higley Schools	amy.bemis@husd.org
Jerry	Butler	Show-Low USD	lindaL@show-low.k12.az.us
Frank	Calsbeek	Old Pueblo Theatrical Solutions	opts3@aol.com
Nori	Cannell	Tempe Union HSD	ncannell@tuhsd.k12.az.us
Gina	Covert	Colorado River Union HSD	gcovert@cruhsd.org
Michelle	Crary	Tempe Union HSD	mcrary@tuhsd.k12.az.us
Chris	Cunningham	Sandra Day O'Connor HS	chris.cunningham@dvusd.org
Kathy	David	Tempe Union HSD	kdavid@tuhsd.k12.az.us
Lisa	Doll	Queen Creek UD	ldoll@qcusd.org
Meg	Gianesello	Chandler Unified SD	gianesello.meg@chandler.k12.az.us
Mark	Hamilton	Gilbert Schools	dmark.hamilton@gilbertschools.net
Debbie	Holland	Deer Valley USD	debbie.holland@dvusd.org
Jennifer	Horen	Fountain Hills H.S.	jhoren@fhusd.org
Chuck	King	Maricopa HS	cking@musd20.org
Lois	Lamer	VACTE	llamer@vacte.com
Mario	Loria	Mesa H.S.	mloria@mpsaz.org
Tony	Maldonado	Paradise Valley USD	tmaldonado@pvschools.net
Rick	Neilson	Maricopa H.S.	rneilson@musd20.org
Cindy	Nixon	Higley Schools	cindy.nixon@husd.org
Karl	Oxnam	Tucson USD	karl.oxnam@tusd1.org
Marlene	Plumb	Buena H.S. (Sierra Vista)	nsmithmarlene.plumb@svps.k12.az.us
Kathy	Prather	Tucson USD	kathy.prather@tusd1.org
Debbie	Rayment	Higley Schools	debra.rayment@husd.org
Cathy	Raymond	Marana Unified SD	c.raymond@maranausd.org
Pamela	Richards	Phoenix Union HE Dist.	prichards@phxhs.k12.as.us
Mitch	Simmons	Scottsdale Unified SD	msimmons@susd.org
Nichole	Smith	Agua Fria	nsmith@aguafria.org
Steve	Wagoner	Vista Grande High School	swagoner@cguhs.org
Amy	West	Kingman H.S.	awest@kusd.org
Albert	Young	Douglas USD	ayoung@dusd.k12.az.us

Meeting 3

On April 21, 2011, 30 industry representatives convened at ASU Downtown Phoenix to begin the discussion about the technical knowledge and skills needed by entry-level workers in the multimedia industry and to develop standards and measurement criteria. This was an all-day meeting facilitated by ASU/WEDO staff and consultants. The outcome of this meeting was a draft of 27 standards.   Following are the industry people who attended this meeting.

Michael	Barcia	Channel 99
Mark	Braun	Arizona Film & Television Workshops
Jerry	Butler	UP Beat Productions/Videography
Rick	Burress	Artistec, Inc
Frank	Calsbeek	Old Pueblo Theatrical Solutions
David	Cornelius	ASU/Cronkite School of Journalism/ WEDO
Peggy	Deal	Scottsdale Community College
Stanley	Elwood	DAP Technologies
Chuck	Emmert	Know99/PHX 11
Maria	Gámiz	KNUV 1190 / Amigo Multimedia Inc.
Scott	Gastony	Lou Coopey's All Pro School Pictures
Kirt	Ijams	International Media Broadcasting
E.J.	Junker	KOLD News 13
Bill	King	Mesa Schools Printing & Publishing
Richard	Maxwell	Arcadia High School
Nancy	Montoya	International Media Broadcasting
Sandi	Neuman	Printing Industries of AZ & NM
Tarah	Oliver	Clear Channel Radio Communications
Mike	Ortiz	Tucson Unified School District
Alana	Sabin	Alana Sabin Designs
Rod	Saubell	Phoenix Channel 11
Thomas	Schildgen	College of Technology and Innovation, ASU
Stephan	Schultze	Zaki Gordon Institute - Yavapai College
Megan	Sebold	Herff Jones Yearbooks
Sarah	Sher	Red Eagle Post
Rusty	Six	NewTek
Brian	Snyder	Cronkite School of Journalism, ASU
Paul	Stapleton-Smith	Arizona Film & Television Workshops
Wayne	Thayer	Xerox Corporation
Mel	West	City 4 TV Show Low

Note. The invitation for this meeting was sent to 165 industry contacts submitted by the people who attended the Prescott meeting in February.

Meeting 4

On May 9, 2011, a subcommittee of the industry group that met on April 21st convened at ASU Tempe to review the draft of 27 standards and to further refine and develop the standards. The outcome of this meeting was an updated set of 25 standards and measurement criteria. Following are the subcommittee members who attended this meeting and major areas identified to be part of the Multimedia program:

Rick	Burress	Artistec, Inc
Frank	Calsbeek	Old Pueblo Theatrical Solutions
David	Cornelius	ASU/Cronkite School of Journalism/ WEDO
Peggy	Deal	Scottsdale Community college
Stanley	Elwood	DAP Technologies
Richard	Maxwell	Arcadia High School
Sandi	Neuman	Printing Industries of AZ & NM
Tarah	Oliver	Clear Channel Radio Communications
Alana	Sabin	Alana Sabin Designs
Thomas	Schildgen	College of Technology and Innovation, ASU
Stephan	Schultze	Zaki Gordon Institute - Yavapai College
Paul	Stapleton-Smith	Arizona Film & Television Workshops

Major areas identified:
The multimedia industry and its role in the economy
Business practices used by the industry
Verbal /nonverbal and written skills required by the industry
Computer concepts, operations, applications, peripherals, and networking
Using a digital camera and producing photographs
Basic knowledge about digital publishing tools and digital media applications
Creating, producing, and editing digital content, including animation
Controlling lighting using digital photography/videography
Audio equipment for productions
Making a presentation using digital media

 "Track specific" areas identified:
Principles and elements of graphic design
Setting up and operating field/location equipment
Operating studio equipment
Operating a control room
Primary components, principle functions, and purposes of various printing processes
Press operations to produce multicolor printed materials
Finishing and distribution

Meeting 5

The outcomes of the May 9th meeting were compiled and sent to the subcommittee for review and editing with a deadline for getting their comments back to ASU by Friday, May 13, 2011. The subcommittee was also sent an invitation to attend a "face-to-face" meeting on Wednesday, May 18th, to continue the review and edit of the standards and measurement criteria.

Meeting 6

On May 18th, the subcommittee members below met to review the editorial suggestions and comments submitted by the subcommittee following the May 9th meeting. The outcome of this meeting was a list of "core standards" for the Multimedia Program (see separate document).   Committee members also volunteered to continue the work on standards specific to individual content areas such as Audio/Visual, Film/Broadcast, Graphic/Print, Web, and Animation. Their work will be sent back to ASU by May 30th.

David	Cornelius	ASU/Cronkite School of Journalism/ WEDO
Peggy	Deal	Scottsdale Community college
Stanley	Elwood	DAP Technologies
Richard	Maxwell	Arcadia High School
Alana	Sabin	Alana Sabin Designs
Paul	Stapleton-Smith	Arizona Film & Television Workshops

Next Steps:

- Standards/measurement criteria explication
- Business/industry validation of standards and measurement criteria
- Approval and adoption of standards by Commission

Information compiled by WEDO 5-22-11

What makes a good assessment?

- *Reliability* - the consistency of test scores over time

- *Validity* - whether or not the test measures what it is supposed to measure

  *A test possesses content validity when content experts verify that the test measures what it is supposed to measure.

Statistical Review of Items

What does item analysis tell us?

Item Difficulty

Item Discrimination

Distracter Pattern

Item Difficulty

Item difficulty is determined by the percentage of students who answer the item correctly (*p* value).

– When <u>none of the students</u> chooses the correct answer, the *p* value is 0.

– When <u>all of the students</u> choose the correct response, the *p* value is 1.0.

Item Discrimination

A good item discriminates between <u>those who know the content</u> and <u>those who don't know the content.</u>

*An item discrimination value of .3 and above indicates that the item accurately discriminates between those <u>who know</u> and those <u>who don't know</u> the content.

Management System

CTEAZ

Dashboard   Catalog   Users   Logout

Info
- Catalog Manager
- Catalog: *Current Catalog*
- Index: 1.x.x;x

Catalog Navigation
- Current Catalog
- ACCOUNTING AND RELATED SERVICES

Program Locking
- You have no programs checked out
- Checkout ACCOUNTING AND RELATED SERVICES

Search
- Advanced Search
- [   ]
- Search

Up One Level   Scenarios   + Add

ACCOUNTING AND RELATED SERVICES

Standards:

						Index ▲	Standard	C/F	Measurement Criteria
☐	✕			↔	✎	1.1.x;x	DEMONSTRATE	0 / 0	9
☐	✕			↔	✎	1.2.x;x	DEMONSTRATE THE	0 / 0	14
☐	✕			↔	✎	1.3.x;x	DETERMINE PAYROLL	0 / 0	5
☐	✕			↔	✎	1.4.x;x	GENERATE PROCEDURES	0 / 0	5
☐	✕			↔	✎	1.5.x;x	DETERMINE	0 / 0	9
☐	✕			↔	✎	1.6.x;x	EVALUATE ASSETS.	0 / 0	10
☐	✕			↔	✎	1.7.x;x	APPRAISE FORMS OF	0 / 0	7
☐	✕			↔	✎	1.8.x;x	ASSESS THE FINANCIAL	0 / 0	6
☐	✕			↔	✎	1.9.x;x	USE ACCOUNTING	0 / 0	3
☐	✕			↔	✎	1.10.x;x	EXAMINE ETHICAL	0 / 0	3
☐	✕			↔	✎	1.11.x;x	EXPLORE ECONOMIC	0 / 0	4
☐	✕			↔	✎	1.12.x;x	EXPLORE ACCOUNTING	0 / 0	4

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Done

— GO FOR THE GOLD —

The Knowledge Dimension	The Cognitive Process Dimension					
	1. Remembering Retrieve knowledge from long-term memory (recognizing, recalling)	**2. Understanding** Construct meaning from instructional messages using oral, written, and graphic communication (interpreting, exemplifying, classifying, summarizing, inferring, comparing)	**3. Applying** Carry out or use a procedure in a given situation (executing, implementing)	**4. Analyzing** Breakdown material into its constituent parts and determine how the parts relate to one another and to the overall structure or purpose (differentiating, organizing, attributing)	**5. Evaluating** Make judgments based on criteria and standards (checking, critiquing)	**6. Creating** Put elements together to form a coherent or functional whole; reorganize elements into a new pattern or structure (generating, planning, producing)
A. Factual Knowledge The basic elements students must know to be able to solve problems, i.e., terminology, specific details, and elements.						
B. Conceptual Knowledge The interrelationships among basic elements within a larger structure that enable them to function together, i.e., classifications and categories; principles and generalizations; theories, models, and structures.						
C. Procedural Knowledge How to do something, methods of inquiry, and criteria for using skills, algorithms, techniques, and methods, i.e., subject-specific skills and algorithms; subject-specific techniques and methods; and criteria for determining when to use appropriate procedures.						
D. Metacognitive Knowledge Knowledge of cognition in general as well as awareness and knowledge of one's own cognition, i.e., strategic knowledge; contextual and conditional knowledge; and self-knowledge.						
KEY:	**YELLOW – CAUTION** Necessary foundational knowledge and understandings		**GOLD – GO FOR THE GOLD** Target area for item development/summative assessments		**GRAY – OUT OF BOUNDS** Exceeds limitation of multiple-choice assessment items	

Adapted from: *A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives*, edited by Lorin W. Anderson, David R. Krathwohl, Peter W. Airasian, Kathleen A. Cruikshank, Richard, E. Mayer, Paul R. Pintrich, Jams Raths, and Merlin C. Wittrock. Addison Wesley Longman, Inc., New York, 2007. (ISBN 0-8013-1903-X)

Developed by ASU/ADE Assessment Team, June 2010

Arizona CTE Skill Standards and Assessment System

Examples of Verbs for the Cognitive Process Dimensions

1. Remembering Retrieve knowledge from long-term memory (recognizing, recalling)	**2. Understanding** Construct meaning from instructional messages using oral, written, and graphic communication (interpreting, exemplifying, classifying, summarizing, inferring, comparing, explaining)	**3. Applying** Carry out or use a procedure in a given situation (executing, implementing)	**4. Analyzing** Breakdown material into its constituent parts and determine how the parts relate to one another and to the overall structure or purpose (differentiating, organizing, attributing)	**5. Evaluating** Make judgments based on criteria and standards (checking, critiquing)	**6. Creating** Put elements together to form a coherent or functional whole; reorganize elements into a new pattern or structure (generating, planning, producing)
Arrange	Characterize	Administer	Achieve	Appraise	Actualize
Define	Classify	Apply	Advertise	Assess	Change
Describe	Compare	Calculate	Analyze	Compare	Combine
Draw	Complete	Change	Appraise	Conclude	Compose
Duplicate	Convert	Choose	Categorize	Critique	Construct
Identify	Demonstrate	Classify	Classify	Debate	Create
Label	Describe	Complete	Compare	Decide	Design
List	Discuss	Conclude	Contrast	Defend	Devise
Locate	Distinguish	Construct	Critique	Determine	Forecast
Match	Establish	Demonstrate	Debate	Envision	Formulate
Memorize	Execute	Determine	Deduct	Estimate	Generate
Name	Explain	Employ	Determine	Evaluate	Hypothesize
Order	Express	Examine	Diagnose	Examine	Imagine
Recall	Generate	Experiment	Distinguish	Judge	Invent
Recognize	Interpret	Illustrate	Differentiate	Justify	Originate
Relate	Order	Interpret	Distinguish	Prioritize	Plan
Reproduce	Outline	Manipulate	Examine	Rank	Predict
Restate	Paraphrase	Modify	Explain	Rate	Pretend
Select	Predict	Operate	Identify	Recommend	Produce
Spell	Report	Perform	Infer	Review	Propose
State	Restate	Practice	Investigate	Select	
Tell	Summarize	Produce	Research	Support	
Underline	Translate	Solve	Separate	Verify	
	Visualize	Use	Specify	Weigh	

Developed by ASU/ADE Assessment Team, June 2010

Samples of Bloom's Classification of Program Assessment Items

Classification of End-of-Program Assessment Items for <u>CULINARY ARTS</u>   Date: 4-11-11

The Knowledge Dimension	The Cognitive Process Dimension					
	1. Remembering Retrieve knowledge from long-term memory (recognizing, recalling)	**2. Understanding** Construct meaning from instructional messages using oral, written, and graphic communication (interpreting, exemplifying, classifying, summarizing, inferring, comparing)	**3. Applying** Carry out or use a procedure in a given situation (executing, implementing)	**4. Analyzing** Breakdown material into its constituent parts and determine how the parts relate to one another and to the overall structure or purpose (differentiating, organizing, attributing)	**5. Evaluating** Make judgments based on criteria and standards (checking, critiquing)	**6. Creating** Put elements together to form a coherent or functional whole; reorganize elements into a new pattern or structure (generating, planning, producing)
A. Factual Knowledge The basic elements students must know to be able to solve problems, i.e., terminology, specific details, and elements.	195	17	2	1		215
B. Conceptual Knowledge The interrelationships among basic elements within a larger structure that enable them to function together, i.e., classifications and categories; principles and generalizations; theories, models, and structures.	5	3	11			19
C. Procedural Knowledge How to do something, methods of inquiry, criteria for using skills, algorithms, techniques, and methods, i.e., subject-specific skills and algorithms; subject-specific techniques and methods; and criteria for determining when to use appropriate procedures.	17	1	20	2	2	42
D. Metacognitive Knowledge Knowledge of cognition in general as well as awareness and knowledge of one's own cognition, i.e., strategic knowledge; contextual and conditional knowledge; and self-knowledge.	217	21	33	3	2	276
KEY:	**YELLOW – CAUTION** Necessary foundational knowledge and understandings		**GOLD – GO FOR THE GOLD** Target area for item development/summative assessments		**GRAY – OUT OF BOUNDS** Exceeds limitation of multiple-choice assessment items	

RESULTS: Remembering – 79% (217/276)   Applying – 12% (33/276)   Factual Knowledge – 78% (215/276)
Understanding – 8% (21/276)   Analyzing – .1% (3/276)   Conceptual Knowledge – 7% (19/276)
Evaluating – .1% (2/276)   Procedural Knowledge – 15% (42/276)

Classification of End-of-Program Assessment Items for ENGINEERING SCIENCES Date: 4-18-11

The Knowledge Dimension	The Cognitive Process Dimension					
	1. Remembering Retrieve knowledge from long-term memory (recognizing, recalling)	**2. Understanding** Construct meaning from instructional messages using oral, written, and graphic communication (interpreting, exemplifying, classifying, summarizing, inferring, comparing)	**3. Applying** Carry out or use a procedure in a given situation (executing, implementing)	**4. Analyzing** Breakdown material into its constituent parts and determine how the parts relate to one another and to the overall structure or purpose (differentiating, organizing, attributing)	**5. Evaluating** Make judgments based on criteria and standards (checking, critiquing)	**6. Creating** Put elements together to form a coherent or functional whole; reorganize elements into a new pattern or structure (generating, planning, producing)
A. Factual Knowledge The basic elements students must know to be able to solve problems, i.e., terminology, specific details, and elements.	19	16			1	36
B. Conceptual Knowledge The interrelationships among basic elements within a larger structure that enable them to function together, i.e., classifications and categories; principles and generalizations; theories, models, and structures.	3	28	3	16	13	63
C. Procedural Knowledge How to do something, methods of inquiry, and criteria for using skills, algorithms, techniques, and methods, i.e., subject-specific skills and algorithms; subject-specific techniques and methods; and criteria for determining when to use appropriate procedures.	1	11	15	3	3	33
D. Metacognitive Knowledge Knowledge of cognition in general as well as awareness and knowledge of one's own cognition, i.e., strategic knowledge; contextual and conditional knowledge; and self-knowledge.	23	55	18	19	17	132
KEY:	**YELLOW – CAUTION** Necessary foundational knowledge and understandings		**GOLD – GO FOR THE GOLD** Target area for item development/summative assessments		**GRAY – OUT OF BOUNDS** Exceeds limitation of multiple-choice assessment items	

RESULTS: Remembering – 17% (23/132)   Applying – 14% (18/132)   Factual Knowledge – 27% (36/132)
Understanding – 42% (55/132)   Analyzing – 14% (19/132)   Conceptual Knowledge – 48% (63/132)
Evaluating – 13% (17/132)   Procedural Knowledge – 25% (33/132)

Item Development / Item Analysis Committee Meetings / January 8, 2011

ENGINEERING SCIENCES—Charlie Losh, Maggie Mangini, Tracy Rexroat, facilitators
Stephen Burris, Independence High School
Brad Houston, North Grand Canyon High School
Mark Calhoun, Sabino High School
Jim Baygents, University of Arizona
Sylvia Grace, Desert Ridge High School
Kathryn Gerber, Vail High Schools
Bill Golladay, Desert Ridge High School
Andrea Arnejo, Douglas High School

TECHNICAL THEATRE—Lynn Tuttle and Melanie Ohm, facilitators
Carrie Duerk, Buena High Schools
Cory Losenicky, Greenway High School
Jenell Riordan, Desert Ridge High School
Norm Testa, Catalina Foothills High School

HOSPITALITY MANAGEMENT—Joanne Bauman and Ruth Kerr, facilitators
Andrea Cardona, Vista Grande High School
Kathy Haggard, Florence High School
Michelle McCollum, Desert View High School
Claire McWilliams, Fountain Hills High School
Amanda Ortiz, Florence High School,
Ernie Tanner, Glove High School

PRECISION MACHINING—Pat Loughrin and Judy Balogh, facilitators
Larry Geczy, Maricopa Skill Center
Ray Wiggins, Tucson High School
Torbert Brison, Liberty High School
Ken Jacox, Mesa High School

CTE Teacher Institutes - Summer 2011

WYNDHAM PHOENIX
50 East Adams Street, Phoenix 85004

REGISTRATION DEADLINE: March 1, 2011

June 2011

Tuesday-Wednesday
June 7-8

Tuesday-Wednesday
June 14-15

Assessments, Communities-of-Practice, and Sharing with Others

ADE's Career & Technical Education Unit and ASU's Workforce Education and Development Office will host two 2-day teacher institutes in June to continue the process of building high-quality assessments for CTE programs. If you are interested in participating, please review the information in this brochure and complete and return the attached nomination form by **March 1, 2011**. Refer to the dates, times, and program choices attached. Groups will be limited to 5-7 participants.

All participants will receive a Professional Services Contract. Participants within a 50-mile radius of ASU's Downtown Phoenix Campus will receive a stipend of $250 inclusive of mileage reimbursement and meals on your own. Participants from outside the 50-mile radius will receive a stipend of $350 inclusive of mileage reimbursement, meals on your own, and overnight accommodations.

Each institute begins on Day 1 at 8:00 am and concludes on Day 2 at 4:00 pm. Continental breakfast and afternoon snacks will be provided each day.

Following the **March 1, 2011**, deadline, all nominations will be reviewed and teachers will be notified by email as to whether or not they have been selected for participation.

INSTITUTE OBJECTIVES

- To analyze the spring 2011 assessment items and continue the process of building item banks

- To continue building statewide communities-of-practice by participating in group presentations at the ACTE$_{AZ}$ 2011 Summer Conference in July

PARTICIPANT COMMITMENTS

- To attend a 2-day institute

- To participate in a group presentation at the ACTE$_{AZ}$ 2011 Summer Conference in Tucson, July 17-20

PROFESSIONAL DEVELOPMENT CREDIT

- Participants will earn 16 hours of professional development credit from the Arizona Department of Education in cooperation with Arizona State University upon completion of the 2-day session.

Arizona Department of Education in partnership with Arizona State University

ASU UNIVERSITY COLLEGE
ARIZONA STATE UNIVERSITY

CTE Teacher Institutes – Summer 2011

YOU HAVE BEEN NOMINATED TO PARTICIPATE AS A LEAD TEACHER
IN THE CTE TEACHER INSTITUTES – SUMMER 2011!

Respond by February 18, 2011, to be considered!

ADE's Career & Technical Education Unit and ASU's Workforce Education and Development Office will host two 2-day CTE Teacher Institutes in June at the Phoenix Wyndham Hotel. Prior to each institute, a select group of Lead Teachers will attend a 1-day training session to identify topics and appropriate presentation methods for Summer Conference presentations. Following the Monday training session on June 6 or June 13, Lead Teachers will join teachers and others for the 2-day teacher institute. Attached is a flyer with detailed information (dates, times, and program list) about the CTE Teacher Institutes.

As a Lead Teacher, you must meet the following criteria:
- Be nominated by local director, JTED superintendent, or state supervisor
- Have participated previously in item development/item analysis sessions hosted by ASU/WEDO
- Agree to attend the 1-day training session and the following 2-day institute
- Agree to work with other teachers who will present at the summer conference on July 18, 2011

Programs and dates for the institutes are listed below. Check your calendar for your availability.

Institute I Tues/Wed, June 7-8 8:00 am—4:00 pm	Institute II Tues/Wed, June 14-15 8:00 am—4:00 pm
• Advanced Construction Technologies	• Accounting & Related Services
• Aircraft Mechanics	• Advertising & Public Relations
• Architectural Drafting	• Agribusiness Systems
• Automation & Robotics	• Animal Systems
• Automotive Collision Repair	• Arts Management
• Automotive Technologies	• Bioscience
• Cabinetmaking	• Business Management & Administrative Services
• Carpentry	• Business Operations Support & Assistant Services
• Computer Maintenance	• Culinary Arts
• Early Childhood Education	• Emergency Medical Services
• Education Professions	• Entertainment Marketing
• Electronics Drafting	• Entrepreneurship
• Engineering Sciences	• Environmental Services
• Fire Service	• Fashion Design & Merchandising
• Law, Public Safety & Security	• Financial Services
• Mechanical Drafting	• Hospitality Services
• Medical Assisting Services	• Interior Design & Merchandising
• Network Technologies	• Laboratory Assisting
• Pharmacy Support Services	• Natural Resources
• Precision Machining	• Nursing Services
• Software Development	• Plant Systems
• Surgical Technician	• Professional Sales & Marketing
• Therapeutic Massage	• Sports Medicine & Rehabilitation Services
• Web Page Development	• Technical Theatre
• Welding Technologies	

If selected, you will receive a Professional Services Contract for a stipend of $500 inclusive of mileage reimbursement and meals on your own. If needed, lodging will be provided for you at the Wyndham Phoenix Hotel.

FOR PLANNING PURPOSES AND BECAUSE SPACE IS LIMITED, IT IS URGENT THAT WE KNOW WHETHER OR NOT YOU ACCEPT THIS NOMINATION BY FEBRUARY 18, 2011.

All nominations will be reviewed and teachers will be notified by email as to whether or not they have been selected.

Questions? 602-496-1451 or wedo@asu.edu

ASU UNIVERSITY COLLEGE
ARIZONA STATE UNIVERSITY

Workforce Education and Development Office
411 N Central Avenue, Suite 300
Campus Mail Code 7620; Phoenix, AZ 85004-2191
Phone: 602-496-1451; Fax: 602-496-1452

CTE Teacher Institutes – Summer 2011

CONGRATULATIONS!! YOU HAVE BEEN SELECTED TO BE A LEAD TEACHER IN THE CTE TEACHER INSTITUTES – SUMMER 2011!

Program Dates

This summer's CTE Teacher Institutes will be held in June at the Phoenix Wyndham Hotel. Institute I will be held on June 7-8. On Monday, June 6, Lead Teachers will participate in a full-day training session to identify topics and appropriate presentation methods for Summer Conference sessions. During the 2-day institute that follows, Lead Teachers will work with teacher participants to analyze and develop assessment items to for the Technical Skills Assessment item bank. Time will also be allotted to plan group presentations to be offered as sessions on July 18, at the ACTE$_{AZ}$ 2011 Summer Conference in Tucson.

COMMITMENT: As a Lead Teacher, you must agree to the following requirements:
- Participate in the full-day Lead Teacher training on Monday, June 6
- Participate in the 2-day institute, Tuesday and Wednesday, June 7-8
- Work with other teachers to plan a group presentation to be featured at the ACTE$_{AZ}$ 2011 Summer Conference
- Participate in the group presentation at the ACTE$_{AZ}$ 2011 Summer Conference, Monday, July 18, 2011

CONTRACT: Upon receipt of the completed confirmation form (below) and the signed Statement of Professionalism (on the next page), you will receive a Professional Services Contract in the amount of $500. This amount is inclusive of mileage reimbursement and meals on your own. Payment will be made approximately 2-3 weeks after the conclusion of the institute.

LODGING: If needed, lodging will be provided at no cost to you at the Wyndham Phoenix Hotel.

PLEASE COMPLETE THE FORM BELOW, SIGN THE STATEMENT OF PROFESSIONALISM ON THE NEXT PAGE, AND RETURN BOTH BY WEDNESDAY, MARCH 9, 2011.

Email: wedo@asu.edu   FAX: 602-496-1452

Name _____

District _____

School _____

Phone (____) _____   **Email** _____

Home Mailing Address (Street, City, Zip) _____

_____

Summer Phone (____) _____   **Summer Email** _____

Years of experience teaching CTE program _____   **Years of related industry experience (if applicable)** _____

☐ I have participated in ASU's item development/analysis process.

☐ I participated in the CTE Teacher Institutes – Summer 2010.

☐ I am a CTSO advisor. Name of CTSO: _____

☐ I <u>will</u> need overnight accommodations at the Wyndham Phoenix Hotel: ☐ Sunday   ☐ Monday   ☐ Tuesday

☐ I <u>will not</u> need overnight accommodations.

CTE Teacher Institutes – Summer 2011

Participants by Cluster/Program

Institute I – June 7-8, 2011

Cluster 1   **Westin La Paloma**

Advanced Construction Technologies – *Jan Brite, Facilitator*

* Alvarez, Richard	Payson USD	Payson HS	richard.alvarez@pusd.com
English, Cindy	Peoria USD	Ironwood HS	cenglish@peoriaud.k12.az.us
Graham, Bradley	Yuma UHSD	Kofa HS	bgraham@yumaed.org

Cabinetmaking – *Jason Wojcik, Facilitator*

* Bockman, Tom	Prescott USD	Prescott HS	tom.bockman@prescottschools.com
* Kupser, Calvin	Kingman USD	Kingman HS	ckupser@kusd.org
* Neugebauer, Jeff	Camp Verde USD	Camp Verde HS	jneugebauer@campverdeschools.org
Muller, John	Paradise Valley USD	North Canyon HS	jmuller@pvschools.net

Carpentry – *Jason Wojcik, Facilitator*

Beets, Larry	Santa Cruz Valley UHSD	Santa Cruz Valley UHS	lbeets@scvuhs.org
Condra, Roger	Sahuarita USD	Sahuarita HS	rcondra@sahuarita.net
Solomon, David	Yavapai College	Yavapai College	david.solomon@yc.edu

Mechanical Drafting – *Pat Loughrin, Facilitator*

Diaz, David	Douglas USD	Douglas HS	ddiaz@dusd.k12.az.us
Lauritzen, Dee	Eastern Arizona College	Graham County CC	dee.lauritzen@eac.edu

Cluster 2   **Westin La Paloma**

Automotive Collision Repair – *Charlie Losh, Facilitator*

Cifalia, Dan	Paradise Valley USD	Paradise Valley HS	dcifalia@pvschools.net
Lopez, Carlos	Paradise Valley USD	Paradise Valley HS	calopez@pvschools.net
Monson, Dane	Phoenix UHSD	Metro Tech HS	monson@phxhs.k12.az.us

Automotive Technologies – *Lynne Bodman Storms, Facilitator*

* Yandell, Bill	Tucson USD	Rincon HS	william.yandell@tusd1.org
Baker, Randy	EVIT	EVIT	rbaker@evit.com
Champagne, Norm	Yuma UHSD	Kofa HS	nchampagne@yumaed.org
Petersen, Jerry	Pima County JTED	Pima County JTED	jpetersen@pimajted.org
Phillips, Randy	Peoria USD	Ironwood HS	rphillips@peoriaud.k12.az.us
Ramirez, Felix	Peoria USD	Cactus HS	framirez@peoriaud.k12.az.us
Skroch, Steve	Paradise Valley USD	Horizon HS	sskroch@pvschools.net

* Lead Teacher

Cluster 3   Westin La Paloma

Computer Maintenance – *Lynn Tuttle, Facilitator*

* Buckley, Bob	Tucson USD	Pueblo Magnet HS	arthur.buckley@tusd1.org
Beute, Seth	Phoenix UHSD	Metro Tech HS	beute@phxhs.k12.az.us
Coe, Kevin	Phoenix UHSD	Metro Tech HS	kcoe@phxhs.k12.az.us
Howe, Devin	Higley USD	Williams Field HS	devin.howe@husd.org
Manz, Chuck	Page USD	Page HS	cmanz@pageud.k12.az.us

Software Development – *Joanne Bauman, Facilitator*

* Madden, Jim	Tucson USD	University HS	james.madden@tusd1.org
Woodward, Jeremy	Amphitheater USD	Canyon del Oro HS	jwoodward@amphi.com

Web Page Development – *Melanie Ohm, Facilitator*

* Andrews, Stephen	Phoenix UHSD	Cyber HS	andrews@phxhs.k12.az.us
* Glispie, Helen	Deer Valley USD	Sandra Day O'Connor HS	Helen.Glispie@dvusd.org
* Guetter, Lynda	Deer Valley USD	Barry Goldwater HS	lynda.guetter@dvusd.org
Kelley, Matt	Mesa USD	Red Mountain HS	jkelley@mpaz.org
Patton, Jeni	Cochise Comm College Dist	Cocise Comm College Dist	pattonj@cochise.edu
South, Jesse	Tanque Verde USD	Tanque Verde HS	jsouth@tanq.org

Cluster 4   Westin La Paloma

Engineering Sciences – *Maggie Mangini, Facilitator*

* Burris, Stephen	Glendale UHSD	Independence HS	sbburris@guhsdaz.org
Adams, Mark	Peoria USD	Ironwood HS	madams@peoriaud.k12.az.us
Bracamonte, Steve	Tucson USD	Tucson High Magnet	steve.bracamonte@tusd1.org
Vivers, Bruce	Paradise Valley USD	North Canyon HS	bvivers@pvschools.net
Zimmer, Lora	Glendale UHSD	Moon Valley HS	lszimmer@guhsdaz.org

Precision Machining – *Tracy Rexroat, Facilitator*

* Jacox, Ken	Mesa USD	Mesa HS	ksjacox@mpsaz.org
* Wiggins, Ray	Tucson USD	Tucson HS	ray.wiggins@tusd1.org

Welding Technologies – *Bruce Watkins, Facilitator*

* Larsen, Dale	Holbrook USD	Holbrook HS	dlarsen@holbrook.k12.az.us
* Yazzie, Jonathan	Tuba City USD	Tuba City HS	jyazzie@tcusd.org
Romero, Bart	Maricopa USD	Maricopa HS	bromero@musd20.org

Cluster 5   Westin La Paloma

Fire Service – *Judy Balogh, Facilitator*

* Berger, Mike	CAVIT	CAVIT	mberger@cavitschools.org
Baugher, Terry	EVIT	EVIT	tbaugher@evit.com
Darby, Steve	Camp Verde USD	Camp Verde HS	sdarby@campverdeschools.org
Smith, Jeff	Tucson USD	Pueblo Magnet HS	jeffrey.smith@tusd1.org
Solomon, Bill	Northland Pioneer Coll	Northland Pioneer Coll	bsolomon@npc.edu

* Lead Teacher

Law, Public Safety & Security – *Ruth Kerr, Facilitator*

* Kennedy, Brian	CAVIT	CAVIT	bkennedy@cavitschools.org
* Rau, Kathy	Pima County JTED	Pima County JTED	krau@pimajted.org
Allen, Gerald	Phoenix UHSD	Franklin Police & Fire HS	gallen@phxhs.k12.az.us
Saulsby, Leslie	Peoria USD	Peoria HS	lsaulsby@peoriaud.k12.az.us
Walton, Doug	Winslow USD	Winslow HS	dwalton@wusd1.org

Cluster 1   **Loews Ventana Canyon**

Early Childhood Education – *Paulett Ellis, Facilitator*

* Alexander, Melanie	Chandler USD	Basha HS	alexander.melanie@chandler.k12.az.us
* Atteberry-Pierpont, Jennifer	Amphitheater USD	Canyon del Oro HS	jatteberry@amphi.com
* Boyce, DeAnne	Peoria USD	Peoria HS	dboyce@peoriaud.k12.az.us
Hendry, Marie	Lake Havasu USD	Lake Havasu HS	mhendry@havasu.k12.az.us
Knill, Carilyn	Mesa USD	Skyline HS	caknill@mpsaz.org
Leyendecker, Michele	Colorado River UHSD	Mohave HS	mleyendecker@cruhsd.org
Moraga, Lauren	Pima County JTED	Pima County JTED	lmoraga@pimajted.org

Education Professions – *Stephanie Hahn, Facilitator*

* Binnicker, Julie	Peoria USD	Cactus HS	jbinnicker@peoriaud.k12.az.us
* Stockwell, Julie	Glendale UHSD	Greenway HS	jnstockwell@guhsdaz.org
Gonzales, Karen	Chandler USD	Hamilton HS	gonzales.karen@chandler.k12.az.us
Ray, Jennifer	Fountain Hills USD	Fountain Hills HS	jhoren@fhusd.org
Schon, Ingrid	Payson USD	Payson HS	Ingrid.schon@pusd.com
Stull, Bonnie	Tucson USD	Pueblo HS	bonnie.stull@tusd1.org
Valdivia, Katherine	Phoenix College	Phoenix College	katvaldivia@cox.net

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Cluster 2   **Loews Ventana Canyon**

Medical Assisting Services – *Bob Keim, Facilitator*

* Wooley, Jeff	CAVIT	CAVIT	jwooley@cavitschools.org
Buchanan-Anderson, Linda	Central Arizona College	Central Arizona College	linda.buchanan@centralaz.edu
Brown, Tiffany	Central Arizona College	Central Arizona College	tiffany.brown3@centralaz.edu
Vermiglio-Smith, Janice	Central Arizona College	Central Arizona College	janice.vermigliosmith@centralaz.edu

Therapeutic Massage – *Kei Blake, Facilitator*

* Barth, Ben	CAVIT	CAVIT	bbarth@cavitschools.org
Pomfret, Susan	Central Arizona College	Central Arizona College	susan.pomfret@centralaz.edu
Price, Caralee	EVIT	EVIT	CPrice@evit.com

* **Lead Teacher**

CTE Teacher Institutes – Summer 2011
Participants by Cluster/Program

Institute II – June 14-15, 2011

Cluster 1 **Loews Ventana Canyon**

Accounting and Related Services – *Shea Padilla, Facilitator*

* Conner, Michelle	Buckeye UHSD	Estrella Foothills HS	mconner@buhsd.org
* Rada, Martha	Phoenix UHSD	Metro Tech HS	mrada@phxhs.k12.az.us
Fraizer, Avajon	Glendale UHSD	Independence HS	afraizer@guhsdaz.org
Gomez, Kathryn	Blue Ridge USD	Blue Ridge HS	kgomez@brusd.k12.az.us
Hale, Jackie	Duncan USD	Duncan HS	jhale@duncan.k12.az.us
Jimmy, Serena	Chinle USD	Chinle HS	sgjimmy@chinleusd.k12.az.us

Business Management and Administrative Services – *Paulett Ellis, Facilitator*

* Demers, Shauna	Tempe UHSD	Mountain Pointe HS	sdemers@tuhsd.k12.az.us
* Rutherford, Mona	Tucson USD	Tucson High Magnet	mona.rutherford@tusd1.org
Bishop, Jennifer	Show Low USD	Show Low HS	jenniferb@show-low.k12.az.us
Davis, Dawn	Peoria USD	Peoria HS	dadavis@peoriaud.k12.az.us
Galish, Joe	Coolidge USD	San Tan Foothills HS	joe.galish@coolidgeschools.net

Business Operations Support – *Pat Loughrin, Facilitator*

* Barnett, Diane	Tucson USD	Tucson High Magnet	diane.barnett@tusd1.org
Bowman, Conroy	Maricopa USD	Maricopa HS	cbowman@musd20.org
Chase, Sheila	Douglas USD	Douglas HS	schase@dusd.k12.az.us
Hunter, Ann	Casa Grande UHSD	Casa Grande Union HS	ahunter@cguhsd.org
Nichols, Ronda	Phoenix UHSD	Bostrom HS	rnichols@phxhs.k12.az.us
Shelkin, Judi	Tolleson UHSD	Sierra Linda HS	judi.shelkin@tuhsd.org
Williams, Lawrence	Florence USD	Post Butte HS	lwilliams@fusdaz.org

Financial Services – *Shea Padilla, Facilitator*

* Barris, Becky	Winslow USD	Winslow HS	bbarris@wusd1.org
Becker, Christine	Mesa USD	Mountain View HS	cbecker@mpsaz.org
Bicknell, Maria	Tucson USD	Pueblo HS	maria.bicknell@tusd1.org
LaVoy, Sharon	Mesa USD	Dobson HS	slavoy@mpsaz.org
Mace, Sharon	Casa Grande UHSD	Casa Grande UHS	smace@cguhs.org
Stickel, Daniel	Colorado River UHSD	Mohave HS	dstickel@crusd.org

Cluster 2 **Loews Ventana Canyon**

Entertainment Marketing – *Lynne Bodman Storms, Facilitator*

Parone, Joe	Payson USD	Payson HS	joe.parone@pusd.com
Roth, Ashley	Chandler USD	Hamilton HS	roth.ashley@chandler.k12.az.us
Trump, Juliann	Scottsdale USD	Desert Mountain HS	jtrump@susd.org

* **Lead Teacher**

Entrepreneurship – *Melanie Ohm, Facilitator*

* Fitzpatrick, Jayme	Deer Valley USD	Deer Valley HS	jayme.fitzpatrick@dvusd.org
* Shea, Cheryl	Paradise Valley USD	Pinnacle HS	cshea@pvschools.net
Brubaker, Rob	St David USD	St David HS	rbrubaker@mail.stdavid.org
Christman, Kelly	Tanque Verde USD	Tanque Verde HS	kchristman@tanq.org
Coots, Michelle	Deer Valley USD	Boulder Creek HS	michelle.coots@dvusd.org
Ence, Rich	Maricopa USD	Maricopa HS	rence@musd20.org
Saunders, Duncan	Hayden-Winkelman USD	Hayden HS	saundersd@hwusd.k12.az.us

Professional Sales and Marketing – *Lynne Bodman Storms, Facilitator*

* Kroll, Linda	Casa Grande UHSD	Vista Grande HS	lkroll@cguhs.org
Ayers, Thomas	Tucson USD	Cholla HS	thomas.ayers@tusd1.org
Frommer, Kathy	Mesa USD	Mountain View HS	kefromme@mpsaz.org
Glickman, Sam	Casa Grande UHSD	Casa Grande HS	s.glickman25@gmail.com
Johnson, Steve	Phoenix UHSD	Maryvale HS	sjohnson4@phxhs.k12.az.us
Niemi, Kim	Glendale UHSD	Independence HS	klniemi@guhsdaz.org
Watson-Murray, Sharon	Chinle USD	Chinle HS	wesharon@chinleusd.k12.az.us

Cluster 3   Loews Ventana Canyon

Bioscience Technologies – *Tracy Rexroat, Facilitator*

* Wilch, Margaret	Tucson USD	Tucson High Magnet	margaret.wilch@tusd1.org
Cote, Lynne	Marana USD	Mountain View HS	l.m.cote@maranausd.org
Grimes, Amanda	Mesa USD	Mesa HS	aagrime@mpsaz.org
King, Stephanie	Tempe UHSD	Tempe UHS	stephaking@gmail.com
Musheno, Birgit	Tempe UHSD	Desert Vista HS	bmusheno@tuhsd.k12.az.us

Cluster 4   Loews Ventana Canyon

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Cluster 5   Loews Ventana Canyon

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* Lead Teacher

Emergency Medical Services – *Charlie Losh, Facilitator*

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Cluster 6   Loews Ventana Canyon

Culinary Arts – *Maggie Mangini, Facilitator*

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* Gaul, Mike	Kingman USD	Kingman HS	mgaul@kusd.org
* Pastor, Patti	Flagstaff USD	Flagstaff HS	ppastor@fusd1.org
* Piper, Geri	Dysart USD	Valley Vista HS	geri.piper@dysart.org
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Cluster 7   Loews Ventana Canyon

Fashion Design and Merchandising – *Ruth Kerr, Facilitator*

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Interior Design and Merchandising – *Jan Brite, Facilitator*

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Thrasher, Sandra	Tombstone USD	Tombstone HS	sthrasher@tombstone.k12.az.us

Cluster 8   Loews Ventana Canyon

Technical Theatre – *Lynn Tuttle, Facilitator*

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Como, Ed	Scottsdale USD	Chaparral HS	ecomo@susd.org
Fairchild, Richard	Scottsdale USD	Arcadia HS	rfairchild@susd.org
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Roehr, Jim	Scottsdale USD	Desert Mountain HS	james.roehr@susd.org

* Lead Teacher

Agribusiness Systems – *Bruce Watkins and Bob Torres, Facilitators*

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Animal Systems – *Bruce Watkins and Bob Torres, Facilitators*

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Plant Systems – *Bruce Watkins and Bob Torres, Facilitators*

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Assessment Sessions at
ACTE_AZ 2011 Summer Conference

Sunday, July 17 and Monday, July 18

Walk a Mile in Your Students' Shoes
Sunday, July 17, 7:00 pm – 9:00 pm; Monday, July 18, 5:30 pm – 7:30 pm

Do you wonder what it is like for your students to take their Technical Skills Assessment?
In this session, you will have the opportunity to take YOUR own Technical Skills Assessment in the program area you teach. Test is real, proctored same as for students; however, your test results are for your eyes only. Computer labs will be available for testing in both hotels.

Take the Mystery Out of Technical Skills Assessments
Monday, July 18, 1:30 pm – 5:00 pm

How are assessment items developed? How do I know what the assessment covers?
How can I use student results to improve program instruction?
Attend this session for the opportunity to review your program assessment results and hear from your colleagues about the lessons they have learned and best practices for mastering the end of program technical assessments.

Loews Ventana Canyon	Westin La Paloma
• Culinary Arts	• Agribusiness Systems / Animal Systems / Plant Systems / Environmental Services / Natural Resources
• Fashion-Interior Design & Merchandising / Hospitality Services /	• Law, Public Safety & Security
• Education Professions / Early Childhood Education	• Fire Service
• Nursing Services / Laboratory Assisting / Pharmacy Support Services	• Engineering Sciences / Precision Machining / Welding Technologies / Automation & Robotics
• Sports Medicine & Rehabilitation Services / Emergency Medical Services	• Computer Maintenance / Software Development / Web Page Development
• Therapeutic Massage / Medical Assisting / Surgical Technician	• Architectural Drafting / Mechanical Drafting / Electronics Drafting
• Bioscience Technologies	• Advanced Construction Technologies / Cabinetmaking Carpentry
• Accounting & Related Services / Financial Services / Business Management & Administrative Services / Business Operations Support & Assistant Services	• Automotive Technologies / Automotive Collision Repair / Aircraft Mechanics
• Entertainment Marketing / Entrepreneurship / Professional Sales & Marketing /	

Arizona Department of Education in partnership with Arizona State University

Take the Mystery Out of Technical Skills Assessments

ACTE_{AZ} 2011 Summer Conference
Monday, July 18, 1:30 pm – 5:00 pm

ROOM ASSIGNMENTS, PRESENTERS AND FACILITATORS

LOEWS
Kiva Ballroom A
    Fashion Design & Merchandising
    Interior Design & Merchandising
    Hospitality Services
        Presenters
            Brenda Thompson   Blue Ridge HS   bthompson@brusd.k12.az.us
            Stephanie Thomson   Mesquite HS   stephanie.thomson@gilbertschools.net
            Trisha McCreary   Chaparral HS   PMcCreary@susd.org
            Ruth Kerr   AZ Dept of Education   ruth.kerr@azed.gov
Kiva Ballroom B
    Accounting & Related Services
    Financial Services
    Business Management & Administrative Services
    Business Operations Support
        Presenters
            Michelle Conner   Estrella Foothills HS   mconner@buhsd.org
            Martha Rada   Metro Tech HS   mrada@phxhs.k12.az.us
            Shauna Demers   Mountain Pointe HS   sdemers@tuhsd.k12.az.us
            Mona Rutherford   Tucson High Magnet   mona.rutherford@tusd1.org
            Diane Barnett   Tucson High Magnet   diane.barnett@tusd1.org
            Shea Padilla   AZ Dept of Education   shea.padilla@azed.gov
Hospitality Parlor 2205
    Culinary Arts
        Presenters
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            Jennifer Brooks   Moon Valley HS   j1brooks@guhsdaz.org
            Mike Gaul   Kingman HS   mgaul@kusd.org
            Patti Pastor   Flagstaff HS   ppastor@fusd1.org
            Geri Piper   Valley Vista HS   geri.piper@dysart.org
            Jan Brite   AZ Dept of Education   jan.brite@azed.gov
Ventana
    Entertainment Marketing
    Entrepreneurship
    Professional Sales & Marketing
        Presenters
            Juliann Trump   Desert Mountain HS   jtrump@susd.org
            Jayme Fitzpatrick   Deer Valley HS   jayme.fitzpatrick@dvusd.org
            Cheryl Shea   Pinnacle HS   cshea@pvschools.net
            Linda Kroll   Vista Grande HS   lkroll@cguhs.org
            Lynne Bodman Storms   ASU/WEDO   lynne.storms@asu.edu
Salon D
    Nursing Services
    Laboratory Assisting
    Pharmacy Support Services
        Presenters
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            Rosemarie Prater   Mountain View HS   R.T.Prater@maranausd.org
            Kei Blake   AZ Dept of Education   kei.blake@azed.gov

Salon J
Education Professions
Presenters
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Julie Stockwell   Greenway HS   jnstockw@guhsdaz.org
Stephanie Hahn   AZ Dept of Education stephanie.hahn@azed.gov

Salon K
Early Childhood Education
Presenters
Melanie Alexander   Basha HS   alexander.melanie@chandler.k12.az.us
Jennifer Atteberry-Pierpont Canyon del Oro HS jatteberry@amphi.com
DeAnne Boyce   Peoria HS   dboyce@peoriaud.k12.az.us
Stephanie Hahn   AZ Dept of Education stephanie.hahn@azed.gov

Sonora
Bioscience Technologies
Presenters
Margaret Wilch   Tucson High Magnet margaret.wilch@tusd1.org
Melanie Ohm   ASU/WEDO   Melanie.ohm@asu.edu

Sabino
Sports Medicine & Rehabilitation Services
Emergency Medical Services
Presenters
JD Burgess   Millennium HS   jburgess@AguaFria.org
Jenny Harpest   Kingman HS   jharpest@kusd.org
Bob Keim   ASU/WEDO   robert.keim@asu.edu

Rincon
Therapeutic Massage
Medical Assisting
Surgical Technician
Presenters
Jeff Wooley   CAVIT   jwooley@cavitschools.org
Ben Barth   CAVIT   bbarth@cavitschools.org
Paulett Ellis   AZ Dept of Education paulett.ellis@azed.gov

WESTIN
Murphey I
Automotive Technologies
Automotive Collision Repair
Aircraft Mechanics
Presenters
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Charles Losh   ASU/WEDO   charles.losh@asu.edu

Murphey II
Architectural Drafting
Mechanical Drafting
Electronics Drafting
Presenters
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Pat Loughrin   ASU/WEDO   patricia.loughrin@asu.edu

Murphey III
Advanced Construction Technologies
Cabinetmaking
Carpentry
Presenters
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Calvin Kupser   Kingman HS   ckupser@kusd.org
Jeff Neugebauer   Camp Verde HS   jneugebauer@campverdeschools.org
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Finger Rock I
    Computer Maintenance
    Software Development
    Web Page Development
      Presenters

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Lynda Guetter	Barry Goldwater HS	lynda.guetter@dvusd.org
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Finger Rock II
    Fire Service
      Presenters

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Finger Rock III
    Law, Public Safety & Security
      Presenters

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Judy Balogh	ASU/WEDO	j.balogh@asu.edu

Verbena
    Engineering Sciences
    Precision Machining
    Welding Technologies
    Automation & Robotics
      Presenters

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Jonathan Yazzie	Tuba City HS	jyazzie@tcusd.org
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Lantana
    Multimedia Technologies
      Presenters

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Grand II
    Agribusiness
    Animal Systems
    Plant Systems
    Environmental Services
    Natural Resources
      Presenters

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Ginnie Strait	Hamilton HS	strait.ginnie@chandler.k12.az.us
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EXECUTIVE SUMMARY

WORKPLACE EMPLOYABILITY SKILLS PROJECT

"LISTENING TO THE VOICES OF ARIZONA BUSINESS & INDUSTRY"

EXCERPTS FROM THE FULL REPORT

PRESENTED TO THE ARIZONA SKILL STANDARDS COMMISSION

FOR ACCEPTANCE ON MAY 24, 2011 AND ADOPTION, JULY 17, 2011

Arizona's New Workplace Skills

Standards Statements as Skill Sets: Arizona's New Workplace Skills (see cover for illustration)

<u>Core Human Interaction Skills in the New Workplace</u>

1. **Complex Communication: Employs complex communication skills in a manner that adds to organizational productivity.**

2. **Collaboration: Collaborates, in person and virtually, to complete tasks aimed at organizational goals.**

3. **Expert Thinking: Integrates a mastery of technical knowledge and skills with thinking strategies to create, to innovate, and to devise solutions.**

<u>Developing the New Worker</u>

4. **Professionalism: Conducts oneself in a professional manner appropriate to organizational expectations.**

5. **Initiative and Self-Direction: Exercises initiative and self-direction in the workplace.**

6. **Intergenerational and Cross-Cultural Competence: Interacts effectively with different cultures and generations to achieve organizational mission, goals, and objectives.**

<u>Redefining the New Workplace</u>

7. **Organizational Culture: Functions effectively within an organizational culture.**

8. **Legal and Ethical Practices: Observes laws, rules, and ethical practices in the workplace.**

9. **Financial Practices: Applies knowledge of finances for the profitability and viability of the organization.**

EXECUTIVE SUMMARY

WORKPLACE EMPLOYABILITY SKILLS PROJECT

"LISTENING TO THE VOICES OF ARIZONA BUSINESS & INDUSTRY"

INTRODUCTION

Workplace employability skills ("soft skills") are critical to getting and keeping a job. While technical skills and "know how" are also critical, technical skills are almost always required by employers in combination with "soft skills" as they hire and keep employees on the job. The rapidly-changing world of work is prompting a new look at what employers expect for workplace employability.

This executive summary recounts what was heard while "listening to the voices of Arizona business and industry." The workplace employability skill definitions, conceptualization, and standards are products of the dialogues with a broad spectrum of Arizona employers.

BACKGROUND

The members of the Arizona Skill Standards Commission, from its inception in 2007, have been committed to the establishment and ongoing development of the Arizona Career and Technical Education (CTE) Assessment System. Because of both federal and state mandates, the Arizona Department of Education (ADE) through the Career and Technical Education (CTE) unit must annually report student attainment of technical skills in accordance with the approved State Plan. Therefore, the Commission's initial focus has been on measuring technical skill attainment. In partnering with Arizona State University (ASU) / Workforce Education and Development Office (WEDO), ADE/CTE has, to date, criterion-referenced assessments of industry-validated technical skill standards in 51 CTE programs. Development is continuing to address technical skills in all Arizona CTE program areas.

The Arizona Career and Technical Education Assessment System was envisioned and designed to be comprehensive, flexible, and expandable as emerging programs were added, as additional modalities of assessment became feasible, and as new needs of the Arizona workplace were identified. Employability and workplace skills have historically been included in Arizona career and technical education programs. Gaining employment for entry-level workers and sustaining employment by proving worth in the workplace have been high priorities for Arizona CTE educators. Yet with the hue and cry across America for preparing a "highly skilled workforce" with "21st century skills," for "the new workplace," much has been left undefined and ambiguous.

ARIZONA STATEWIDE FOCUS GROUPS

THE ARIZONA DEPARTMENT OF EDUCATION CAREER AND TECHNICAL EDUCATION DIVISION and **ARIZONA STATE UNIVERSITY WORKFORCE EDUCATION AND DEVELOPMENT OFFICE** with **CORPORATE EDUCATION CONSULTING, INC.** (CECi) coordinated efforts with **THE ARIZONA JOINT TECHNOLOGICAL EDUCATION DISTRICTS** (JTEDs) and **ARIZONA CHAMBER OF COMMERCE & INDUSTRY** to convene eleven regional focus groups over a six week period to identify workplace employability skills and collect information about their importance and frequency of use in the workplace from the perspective of Arizona business and industry leaders. Nine meetings were hosted by eleven JTEDs and their local Chambers of Commerce, one by Arizona Western College, and a final meeting convened by City of Phoenix Economic Development Department.

While Carolyn Warner, former Arizona Superintendent of Public Instruction, business owner and co-chair of the Arizona Skill Standards Commission, presided over nine of the meetings, Glenn Hamer, President and CEO of the Arizona Chamber of Commerce & Industry and David Bolger, COO of CECi, each chaired a focus group.

CRITICAL WORKPLACE EMPLOYABILITY SKILLS

The skills used to spark participation during the focus groups were identified at the October 20, 2011, meeting of the Arizona Skill Standards Commission as skills required for workplace/economic success in a global knowledge and innovation economy enabled by technology. Seven emerging skills were brought to the Commission in October, and an additional four skills were added to the focus group survey in response to the Commissioners' comments: collaboration, legal and ethical practice, professionalism, and initiative and self-direction.

THE ORIGINAL ELEVEN AS IDENTIFIED FOR THE FOCUS GROUPS

- **DIVERGENT AND CRITICAL THINKING, PROBLEM SOLVING, DECISION MAKING** (expert thinking)
- **COMPLEX COMMUNICATION** (person-to-person interaction, knowledge transfer)
- **CREATIVITY AND INNOVATION** (generating/developing new ideas, products, processes)
- **CULTURAL COMPETENCY** (interacting with diverse groups/individuals for common purposes)
- **SOCIAL NETWORKING FOR BUSINESS** (social media tools for branding, networking, customer service)
- **WORKING ONLINE IN GEOGRAPHICALLY DISTRIBUTED TEAMS** (global work in virtual spaces)
- **VISUAL, PATTERN-BASED THINKING, INVOLVING MATH AND QUANTITATIVE PROCEDURES** (computational thinking)
- **COLLABORATION** (communicating, planning, and implementing activities cooperatively with others)
- **LEGAL AND ETHICAL PRACTICE** (acting within the rules of conduct for business)
- **PROFESSIONALISM** (standards of behavior in the workplace)
- **INITIATIVE AND SELF DIRECTION** (controlling, guiding, and managing one's own activities)

Focus group dialogue notes were coded and tabulated by the project team using the original set of eleven skills plus those topics or themes that emerged during the focus groups, including flexibility/adaptability, financial literacy, generational culture, organizational culture, customer service, and issues of implementation.

Both survey and focus group dialogue data brought trends and patterns to light. This information, considered with other research nationally and globally, resulted in a rich resource of concepts and ideas for drafting the workplace skill framework, standards, and performance objectives.

DYNAMICS OF ARIZONA'S NEW WORKPLACE

Additionally, the dialogue pointed toward the workplace as an increasingly dynamic space with a number of key drivers: rapid technological change, the interaction of multiple generations working side by side, and the pace of innovation, all of which place an increased demand for creativity and innovation on the workplace. This combination of factors constitutes Arizona's "new" workplace and the need to address workplace skills within the context of these dynamics.

WORKPLACE EMPLOYABILITY SKILLS STANDARDS AND MEASUREMENT CRITERIA
presented to the Arizona Skill Standards Commission for their acceptance (5/24/11) and adoption (7/17/11)

1. **Complex Communication: Employs complex communication skills in a manner that adds to organizational productivity.**

   - Demonstrates mastery of traditional communication skills in reading, writing, speaking, and listening within organizational contexts.
   - Uses technologies and social media appropriately to engage various audiences.
   - Exchanges knowledge and processes among team members, colleagues, and clients.
   - Communicates effectively with people of different cultures, generations, and life/work experiences in different situations.

2. **Collaboration: Collaborates, in person and virtually, to complete tasks aimed at organizational goals.**

   - Applies personal strengths to enhance the effectiveness of the team.
   - Builds on strengths and contributions of others to achieve common goals.
   - Works cooperatively with different cultures and generations.
   - Optimizes technology to collaborate with others.
   - Earns trust of partners and team members.
   - Exchanges essential information among collaborators.
   - Exercises shared leadership.

3. **Expert Thinking: Integrates a mastery of technical knowledge and skills with thinking strategies to create, to innovate, and to devise solutions.**

   - Recognizes the existence of a problem, sometimes despite evidence to the contrary.
   - Engages in continuous learning through inquiry and reflection.
   - Exhibits expertise by asking relevant questions and listening actively.
   - Uses multiple thinking strategies, such as critical thinking, divergent thinking, problem solving, and decision making, to determine a course of action.
   - Takes action based on confidence in mastery.
   - Analyzes evidence based on mastery knowledge to solve problems.
   - Makes a well-reasoned case supported by evidence and mastery knowledge to explain conclusions.

4. **Intergenerational and Cross-Cultural Competence: Interacts effectively with different cultures and generations to achieve organizational mission, goals, and objectives.**

   - Uses relevant intergenerational and cross-cultural communication that acknowledges differences.
   - Honors the contributions of diverse partners and team.
   - Exercises cultural sensitivity while working in the global marketplace.
   - Promotes intergenerational understanding through active listening and respectful communication.
   - Contributes to an environment that enables different cultures and generations work together successfully.
   - Respects generational differences regarding the use of technology at the workplace.

5. **Professionalism: Conducts oneself in a professional manner appropriate to organizational expectations.**

   - Adheres to organizational protocol, such as behavior, appearance, and communication.
   - Manages time in accordance with organizational expectations, including punctuality, productivity, and time on task.
   - Represents the organization in a positive manner that reflects its mission and goals accurately.
   - Performs assigned tasks with a "can do" attitude.

- Makes appropriate distinctions between personal and work-related matters.
- Produces work that reflects professional pride.

6. **Organizational Culture: Functions effectively within an organizational culture.**

- Articulates organizational history, structure and underlying vision, mission, values, and goals.
- Meets expectations of the hiring organization regarding time commitment, dress code, communication protocols, jargon of the job, safety, and business procedures and practices.
- Demonstrates skills needed to maintain organization's expectations, such as teamwork, positive attitude, interaction with others, chain of command, initiative, informal learning, adherence to safety requirements, and organizational policy and procedures.
- Integrates organizational values in performance of work.
- Applies technology to benefit the organization's culture.
- Demonstrates etiquette and manners appropriate to the organizational culture.
- Embodies organizational culture in customer service.

7. **Legal and Ethical Practices: Observes laws, rules, and ethical practices in the workplace.**

- Respects the organization's physical and intellectual property.
- Demonstrates loyalty to the organization, its mission, and its resources.
- Reports to supervisor conditions and practices that are harmful to workers.
- Adheres to the policies and procedures of the organization.
- Follows all applicable local, state, and federal laws.
- Takes responsibility for one's actions in the workplace, such as disclosing personal mistakes to supervisor.
- Manages resources for the good of the organization.
- Acts with integrity.
- Interacts respectfully with co-workers and customers.

8. **Financial Practices: Applies knowledge of finances for the profitability and viability of the organization.**

- Exhibits competence in personal and organizational financial management.
- Articulates financial goals and strategies of the organization.
- Contributes to organizational profitability.
- Acts as a responsible steward of organizational resources.

9. **Initiative and Self-Direction: Exercises initiative and self-direction in the workplace.**

- Takes action without direction within the boundaries of one's job.
- Exercises leadership and self-direction within organizational structure.
- Asks questions and seeks information as needed, exercising curiosity.
- Pursues opportunities to learn new skills.
- Seeks responsibilities beyond one's scope of work.
- Generates ideas, opportunities, and strategies for the organization, contributing to its resources and goals, such as intellectual property and improved products and services.
- Demonstrates focus and a drive for results.
- Assesses consequences of potential actions.
- Pursues career advancement opportunities within organization or field.
- Engages in informal on-the-job learning within the organization.
- Adapts to changing conditions/situations and expectations.
- Exercises judgment on when, where, how and to what degree one acts alone or collaboratively.

MOVING FORWARD

The Workplace Employability Skills Project Team work in the near future includes:

1. continuing the employers' role in the process in order to develop sample rubrics that manifest the skills indicated by the standards and measurement criteria;
2. creating a format for contextualized scenarios based on the rubrics for a pilot assessment in spring 2012; and
3. meeting the challenges of scalability across programs and geographic locations.

CONCLUSION

"Listening to the Voices of Arizona Business and Industry" has afforded a fresh perspective on the critical skills needed for getting and keeping NOT just a job – but to finding oneself within the ever-changing world of work. In preparing Arizona Career and Technical Education students with a full array of technical AND workplace skills, Arizona, this nation, and, indeed, the world will be better served.